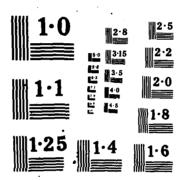
AGULHAS RETROFLECTION CRUISE NOVEMBER-DECEMBER 1983 HYDROGRAPHIC (CTD) DATA(U) LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES NY D B CAMP ET AL. FEB 86 LDGO-86-1 N00014-84-C-0132 F/G 8/1 AD-A168 163 1/5 UNCLASSIFIED NL



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Agulhas Retroflection Cruise

November-December 1983 Hydrographic (CTD) daia Final Technical Report LDG0-86-1

Lamont-Doherty
Geological Observatory
of Columbia University
Palisades, New York 10964
February 1986

Department of the Navy Office of Navat Research Contract N00014-84-C-0132 06 Approved for public release, distribution unlimited.

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AGULHAS RETROFLECTION CRUISE

November - December 1983

Hydrographic (CTD) Data

Dennis B. Camp William E. Haines Bruce A. Huber Sarah E. Rennie Arnold L. Gordon

Technical report

LDG0-86-1

Prepared under Contract N00014-84-c-0132 Sc 00 Office of Naval Research Arnold L. Gordon, Principal Investigator

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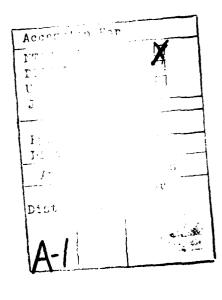
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Abstract

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During November and December 1983, scientists aboard the R/V Knorr studied circulation and stratification of the Agulhas Current off South Africa. Eighty five stations were occupied. The hydrographic and nutrient data from those stations appear in this report as listings and plots. Also, processing methods are explained. It is the control of the con

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This report presents the hydrographic data collected 4n November and December 1983 on board R/V KNORR as part of the Agulhas Retroflection Cruise (ARC) (KNORR cruise 104 leg 5).

Eighty-five stations were occupied as shown in Table I. A cruise track appears in this report after the figures. The data collection system consisted of a modified Neil Brown Instrument Systems, Inc. CTD-02 combined with a 24 position 10 liter rosette sampler. The instruments and data acquisition system were provided by the Physical and Chemical Oceanographic Data Facility (PACODF) of Scripps Institute of Oceanography. A combined team of PACODF and Lamont personnel carried out the at-sea data collection. Subsequent data treatment has been done at Lamont.

The objectives of ARC were:

- to resolve the thermohaline structure at the retroflection of the Agulhas Current;
- to investigate possible eddy shedding;
- 3) to determine if there is significant "leakage" of Indian Ocean water into the Atlantic; and
- 4) to observe the characteristics of the winter cooled Indian Ocean water within the Agulhas Extension and associated ventilation of the Indian Ocean Thermocline.

Water samples obtained from the rosette were analysed for a variety of constituents. The analyses are summarized in Table II.

Data Treatment

A. CTD Sensor Corrections

The PACODF CTD used had been modified slightly, so several corrections have been applied in addition to the usual corrections for temperature-conductivity time constant mismatch:

l) The temperature correction circuitry for the pressure sensor was disabled, requiring a lagged temperature calculation and application of a temperature sensitivity correction to the pressure of the form

$$P = P + 0.56T$$

where T is a lagged temperature. This dependence was determined from laboratory measurements of the temperature dependence of measured CTD pressure done at PACODF.

2) PACODF recommends the use of a lagged temperature in the calculation of oxygen from the polarimetric oxygen sensor, and so the oxygen sensor temperature was not recorded. Instead, laboratory measurements of the oxygen sensor temperature time

constant were used to calculate a lagged temperature for use in the oxygen calculation.

3) The time constant mismatch between temperature and conductivity was corrected by applying a phase lagging filter to the conductivity signal of the form

$$CO_i = (l-a)CO_i + aCO_{i-l}$$

where $a = exp(-l/t)$

A similar technique was used to calculate lagged temperatures for pressure and oxygen. For conductivity, the filter parameter t was estimated by first computing the coherence and phase between temperature and computed salinity for a range of t, then choosing t to minimize the phase difference at high frequencies. While not all salinity spikes can be eliminated by this technique, the appropriate choice of t minimizes the spiking over the range of depths and gradients measured.

B. Decimation

The raw data was reduced to 1 decibar levels by first smoothing the data with a Gaussian filter (21 weights) and then retrieving values closest to the desired level. This technique results in a maximum uncertainty in represented level of +0.5 dbars, though typically the selected values are within 0.1 dbars of the desired level. A first difference edit is performed during the process to correct gross errors in the data prior to smoothing.

C. Calibration

Laboratory calibrations from PACODF were used to correct the pressure and temperature. Water sample analyses of salinity and dissolved oxygen concentration served as standards for the correction of CTD conductivity and calculated dissolved oxygen.

For conductivity, the rosette salinity values were used to compute the corresponding conductivity (using corrected CTD pressure and temperature) which was then compared to the conductivity measured by the CTD. Least squares fit techniques were applied to derive a correction equation for the CTD. (See figures I and II).

Processing of CTD oxygen was more complicated.

During the cruise, 1204 bottle oxygen samples were collected during uptraces of CTD casts. A file of 1204 corresponding downtrace CTD scans was formed: the downtrace scan with a water density equal or closest to the density of the water where the corresponding bottle sample was collected was extracted and entered into the file. The extracted scans contained pressure, temperature, salinity, oxygen current and estimated oxygen temperature from the CTD and oxygen from the bottle. These values were substituted into the following formula:

correction factor due to product of pressure and

Multiple linear regression techniques found the values for pcor, tcor, ptcor and $S_{\rm oc}$ for which a best fit was obtained.

temperature for membrane permeability.

ptcor

After using the formula to compute CTD oxygen for all the CTD data, it was discovered that the oxygen sensor did not behave consistently during the cruise, especially at great pressures. Therefore, the file of extracted scans was divided into groups of stations using time and depth of cast as criteria and run through multiple linear regression until a best fit to the formula for each group was obtained. A third order polynomial fit for pressure for each station was also applied. See figure III for a plot of pressure vs. delta oxygen (CTD-bottle). In this report, any graph with CTD oxygen plotted also has bottle oxygen plotted.

Surface corrections

During processing of ARC CTD data it was discovered that a salinity-temperature mismatch occurred at the surface. The pressure where the package reached equilibrium (the first "good" scan) was found and was extrapolated to the surface.

In the following table, ST = station and PO = pressure where first "good" scan was found.

ST	<u>P0</u>	ST PO	ST PO	$\underline{\text{ST}} \ \underline{\text{PO}}$
01	07	30 10	47 04	67 12
05	=	31 04	49 06	69 06
06		32 05	50 08	70 12
08	07	33 03	52 04	71 06
10	07	34 08	53 03	72 09
12	05	3 5 0 9	54 03	73 09
13	03	36 12	55 08	74 07
15	04	37 06	56 05	75 09
19	07	39 17	57 10	76 06
22	03	41 05	60 04	80 08
23	03	42 11	61 11	82 04
25	04	43 08	62 04	84 06
26	07	44 05	64 11	85 06
27	13	45 08	65 14	
29	11	46 05	66 10	

DATA REPORT FORMAT

Data for each station is presented in tabular form, followed by a set of 3 graphs. The chemistry data is tabulated with the CTD data. Individual plots of the chemistry data are not presented, but group plots can be found at the end of the report for selected parameters.

Data Listings

Each listing is preceded by header information:

Line 1: SHIP - a 2 letter ship identifier (KN = KNORR)

CRUISE - institutional cruise identifier

STATION - sequential station number

CAST - cast number within station, followed by DT for downtrace.

Line 2: Position at start of station (Lat, Long), time at start of station (GMT) and date

(YR/MO/DA) Line 3: Position at end of station (Lat, Long), time at end of station (GMT).

Column identifiers (CTD standard levels):

PR Pressure (decibars)

in situ temperature (°C) TE

PT potential temperature (°C)

SA Salinity (PSU)

OX Dissolved Oxygen (ml/1)

os per cent oxygen saturation

S0-S4 Potential density anomaly for a reference pressure of 0, 1000, ... 4000 decibars specific volume anomaly $(cm^3/g \times 10^5)$

AN

Dynamic depth anomaly (dyn m) HZ

BV Brunt-Vaisala frequency (hr 1)

DE depth (m)

The CTD standard level listing is followed by a tabulation of chemistry and associated CTD values for each of the bottles sampled:

PR CTD pressure

TE CTD temperature

PT Potential temp. (computed using rosette salinity

rather than CTD salinity)

SA Salinity (from rosette samples)

02 Dissolved oxygen (rosette)

SI Silicate

PO Phosphate

N3 Nitrate (all nutrients are ug-at/l)

N2 Nitrite

NH4 Ammonia

S9-S4 Potential density anomaly

DE Depth Explanation of bad points or lack of data:

There are a few stations where values of -9.0 are shown for CTD oxygen and per cent oxygen saturation. These values signify lack of good data.

There are stations where the value of Brunt-Vaisala is -9.99 at the end of the the cast. This is because the difference between the pressure at that end level and the level preceding it (dPR) is less than 5 db. Using our scheme for calculating Brunt-Vaisala, if dPR is less than 5 db, then Brunt-Vaisala is invalid.

In the bottle listings below the CTD listings, lack of data is represented by blanks.

Methods of deriving depth:

In the CTD listings, depth in meters is derived according to Saunders and Fofonoff (1976). In the bottle listings, depth is derived according to Saunders (1981) where dynamic depth anomaly is ignored.

References

Saunders, P. M., Fofonoff, N. P., 1976: Conversion of pressure to depth in the ocean. Deep-Sea Res., 23, 109-111.

Saunders, P. M., 1981: Practical conversion of pressure to depth. J. Phys. Oceanogr., 11, 573-574.

Weiss, R. F., 1970: The solubility of nitrogen, oxygen and argon in water and seawater. Deep-Sea Res., 17, 721-735

Acknowledgments

The hard work and attention to detail of all cruise participants is gratefully acknowledged. The members of this able team are listed in Table III. In particular, D. Muus and C. Mattson of PACODF are thanked for their diligence and patience in supporting the vast array of gear and in training other members of the party in its proper use.

The officers and crew of the R/V KNORR provided much appreciated support throughout the cruise.

This work is supported by the Office of Naval Research through contract N00014-84-C-0132 to Columbia University. Arnold L. Gordon is the principal investigator for scope 00 which supports this project.

Station information

The following listing contains:

St Station

Date Date at start of station. Time Time at start of station.

Latitude Latitude at start of station. Degrees and decimal minutes.

All stations have south latitude.

Longitude Longitude at start of station. Degrees and decimal minutes.

All stations have east longitude.

Depth Depth of water column (meters). Wind dir. Direction in degrees. 360=north.

Wind speed Meters/second.

			Wind			
St	Date	Time	Latitude	Longitude	Depth	Dir Speed
01	83 11 13	737	33 51.88	14 59.47	4288	170 1.5
02	83 11 15	103	34 10.18	17 19.73	2251	180 9.8
03	83 11 15	826	34 39.20	16 42.77	3617	160 6.7
ე4	83 11 15	1452	35 7.72	16 8.75	4468	200 6.7
05	83 11 16	15	35 36.13	15 34.27	4769	230 3.6
06	83 11 16	621	36 5.18	14 59.24	4908	290 9.3
07	83 11 16	1314	36 32.67	14 24.16	5002	310 8.7
80	83 11 16	2235	37 1.02	13 48.54	5002	200 7.7
0 9	83 11 17	732	36 .06	13 46.83	4964	200 5.1
10	83 11 17	1534	36 .65	14 38.15	4945	250 2.8
11	83 11 17	2155	36 .10	15 27.70	4842	050 2.6
12	83 11 18	108	35 39.22	15 28.13	4803	090 2.6
13	83 11 18	858	35 54.94	16 12.57	4562	350 2.6
14	83 11 18	1651	35 59.21	17 6.94	4307	calm
15	83 11 18	2335	35 59.94	18 .14	3303	130 6.2
16	83 11 19	735	35 59.76	19 .01	2849	170 7.7
17	83 11 19	1428	36 .64	19 59.05	181	160 7.2
8 i	83 11 20	134	36 59.21	18 37.15	4385	120 15.4
19	83 11 20	1657	38 .62	17 .16	4735	120 4.6
20	83 11 21	218	38 5.72	15 59.44	4908	180 4.1
21	83 11 21	908	38 11.87	14 59.98	3702	070 3.6
22	83 11 21	1615	38 18.45	14 .39	5097	310 3.9
23	83 11 21	2250	38 24.09	12 59.67	5201	010 7.7
24	83 11 22	1020	38 33.19	14 29.85	4798	340 6.2
25	83 11 22	1940	38 39.10	15 31.41	4876	200 9.3
26	83 11 23	223	38 45.94	16 30.26	4955	230 10.3
27	83 11 23	844	38 51.00	17 30.83	4960	280 18.0
28	83 11 23	1825	38 57.59	18 30.44	5086	280 14.9
29	83 11 24	10	39 3.22	18 5.72	5002	310 15.4
30	83 11 25	223	39 14.15	17 43.28	5126	230 15.4
31	83 11 25	552	39 15.25	17 30.72	5097	230 12.9
32	83 11 25	845	39 14.57	17 18.29	4938	250 10.3
33	83 11 25	1333	39 14.76	16 51.78	5024	240 11.8
34	83 11 25	1847	39 15.78	17 44.73	5108	250 11.3
35	83 11 25	2208	39 15.41	18 11.93	5060	220 11.3
36	83 11 26	145	39 16.03	18 37.17	4885	260 8.2

		S	tart		Wind			
St	Date	Time		Longitude	Depth			
37	83 11 26	837	39 59.94	19 14.90	5055	$\overline{280} \ \overline{12.9}$		
38	83 11 26	1837	41 .27	20 6.83	5083	270 12.9		
39	83 11 27	602	41 59.96	20 59.74	5397	130 14.4		
40	83 11 27	1334	41 20.04	20 59.62	5222	240 9.8		
41	83 11 27	1953	40 39.92	20 57.48	5026	170 6.7		
42	83 11 28	304	40 .57	21 .69	5232	020 7.7		
43	83 11 28	1328	39 20.40	20 59.64	5367	070 4.1		
44	83 11 28	2145	38 39.92	21 1.26	5372	090 4.1		
45	83 11 29	645	38 .33	20 59.22	4930	170 1.0		
46	83 11 29	1712	37 20.45	21 .01	4230	170 3.6		
47	83 11 30	110	36 39.89	21 .16	196	170 5.1		
48	83 11 30	1615	35 .06	22 59.97	201	100 7.2		
49	83 11 30	2203	35 34.83	23 23.64	1932	030 3.1		
50	83 12 01	452	36 10.09		3508	030 4.1		
51	83 12 01	1149	36 44.32	24 14.28	5090	360 6.7		
52	83 12 01	2043	37 19.22	24 40.22	3957	300 7.7		
53	83 12 02	358	37 54.32	25 4.67	3957	200 17.0		
54	83 12 02	1240	38 28.71	25 27.55	3555	250 12.9		
55	83 12 03	5	39 9.58	25 39.51	2810	270 12.9		
56	83 13 03	1447	40 10.11	25 40.64	2494	270 13.4		
57	83 12 04	54	41 9.96	25 39.62	3078	230 11.8		
58	83 12 04	928	42 .60	25 40.47	3795	290 10.3		
59	83 12 05	229	40 30.89	24 27.02	3895	310 10.3		
60	83 12 05	1120	39 29.91	23 43.10	5527	290 12.9		
61	83 12 05	1923	38 30.29		5702	220 8.7		
62	83 12 06	30	38 29.99		5267	190 7.7		
63	83 12 06	513	38 30.41	21 43.93	5047	100 7.7		
64	83 12 06	954	38 30.50	21 3.32	5427	no observation 230 7.7		
65	83 12 06	1508	38 32.12	20 24.05	5627 5389	230 7.7 230 6.7		
66 67	83 12 06 83 12 06	1907 2324	38 28.97 38 30.17	19 48.12 19 10.55	4989	350 9.3		
68	83 12 07	414	38 29.95	18 32.68	4937	260 10.3		
69	83 12 07	1010	38 29.62	17 54.62	4897	270 6.7		
70	83 12 07	1532	38 23.67	17 16.74	4876	250 9.3		
71	83 12 07	2020	38 16.96	16 39.93	4852	250 8.2		
72	83 12 08	54	38 10.75	16 2.37	4897	260 9.3		
73	83 12 08	510		15 24.87				
74	83 12 08	1500	37 2.63	14 40.63	5047	350 9.8		
75	83 12 08	1956	36 28.71	14 26.04	4999	200 4.1		
76	83 12 09	43	35 59.90	14 15.30	4941	190 2.6		
77	83 12 09	554	35 30.57	14 4.25	4886	calm		
78	83 12 09	1108	34 59.72	13 52.81	4804	270 3.6		
79	83 12 09	1546	34 37.17	13 43.41	4689	270 4.1		
80	83 12 09	2117	33 59.21	13 30.60	4568	260 4.1		
81	83 12 10	231	33 59.98	14 6.80	4531	010 3.1		
82	83 12 10	658	33 59.97	14 42.34	4436	310 4.1		
83	83 12 10	1110	34 .18	15 18.14	4259	290 3.1		
84	83 12 10	1547	34 .00	15 54.50	3970	260 4.1		
85	83 12 10	2053	34 .93	16 30.06	3179	260 3.6		

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Table II

Water sample analyses

Parameter	Technique
Salinity	Conductivity ratio, Guildline 8400A salinometer (standard water batch P-92)
Dissolved Oxygen	Modified Winkler titration
Phosphate, Nitrate Ammonia	Autoanalizer, on board ship
Silicate, Nitrite	Autoanalizer, frozen for analysis on land
Chlorophyll	Fluorescence of extracted chlorophyll (not reported)
Freon Tritium-helium Trace metals	Not reported

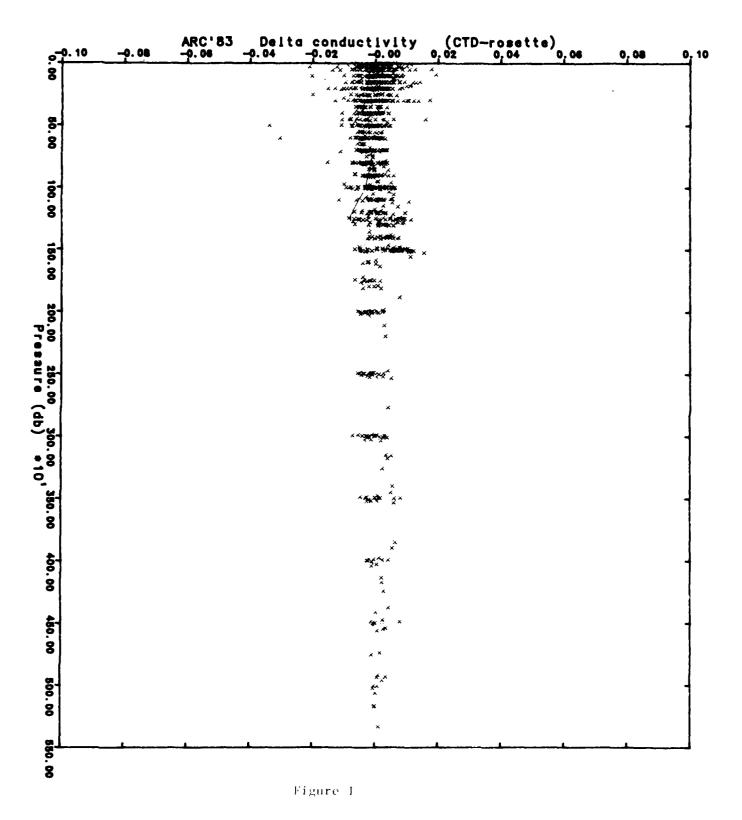
Table III
Participants in R/V KNORR Cruise 104- 5
Agulhas Regroflection Cruise
ARC

Responsibilities	Chief Scientist	Supervision of and training for use of PACODF equipment, and maintaining data quality; hydro watch stander	Maintenance of PACODF equipment; hydrowatch stander	Applied mathematician	Oceanography grad. student; hydro watch stander	Oceanography grad student; hydro watch stander	Oxygen chemist	Electronic technicían, hydro watch stander	Hydro watch stander	Shear probe expert	Freon chemist	Oceanography grad student; freon chemist	Resident theoretician; valued sounding sounding board; hydro watch stander
Affiliation	Lamont-Doherty	SIO-PACODF	SIO-PACODF	Lamont-Doherty	Lamont-Doherty	Lamont-Doherty	Lamont-Doherty	Lamont-Doherty	Lamont-Doherty	инот	U of Miami	SIO	Rijkwaterstaat, The Hage, Holland
Name	1. Arnold L. Gordon	2. David A. Muus	3. Carl W. Mattson	4. Sarah E. Rennie	5. Frank Aikman III	6. Cheryl L. Greengrove	7. Gregory A. Gove	8. Miguel A. Maccio	9. Peter F. Watson	10. Leonard A. Boutin	11. Rana Fine	12. Mark Warner	13. Wilhelmus P. de Ruijter

Responsibilities	The phytoplankton man	Another phytoplankton man	Receiver of IR data; hydro watch stander	Nutrient Chemist	Collector of Trace Metal samples for H. Hennig same affiliation) hydro watch stander	Chlorophyll determination for B. Allanson (same affiliation)	Graduate student of ornithology	Graduate student of Ornithology
Affiliation	URI	URI	NRIO/CSIR Stellenbosch, S. A.	Research Institute for Sea Fisheries Capetown, S. A.	NRIO/CSIR c/o Dept. Physical Oceanography University of Capetown Capetown, S. A.	Dept. of Zoology-Entomology University of Rhodes Grahamstown, S. A.	P. Fitzpatrick Institute for African Ornithology c/o Dept. of Zoology University of Capetown Capetown, S. A.	P. Fitzpatrick Institute for African Ornithology c/o Dept. of Zoology University of Capetown Capetown, S. A.
Name	14. Paul E. Hargraves	15. Dean A. Stockwell	15. Johann R. Lutjeharms	17. Piers. Chapman	18. Alex H. Fricke	19. Chris M. Duncombe-Rae	20. Konald W. Abrams	21. James Enticott

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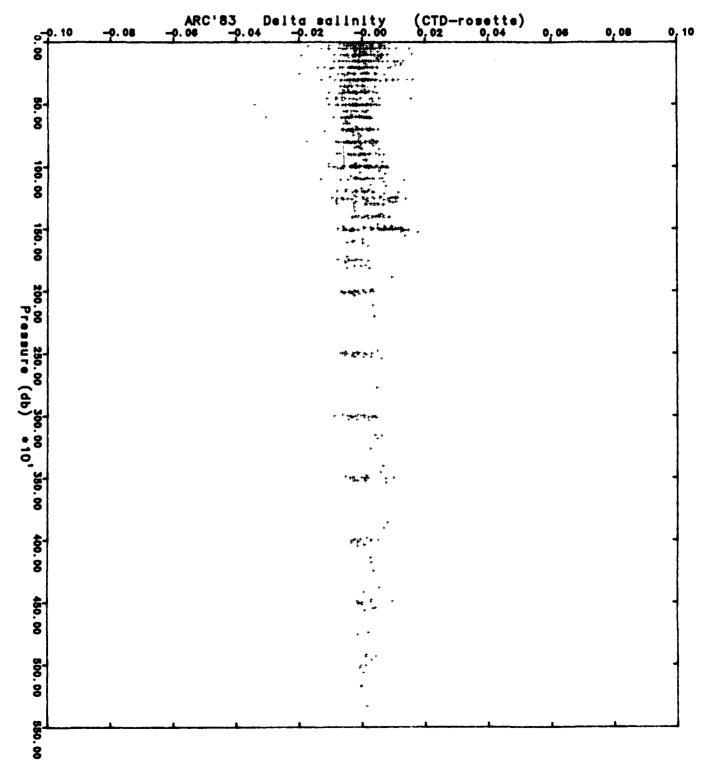


Figure II

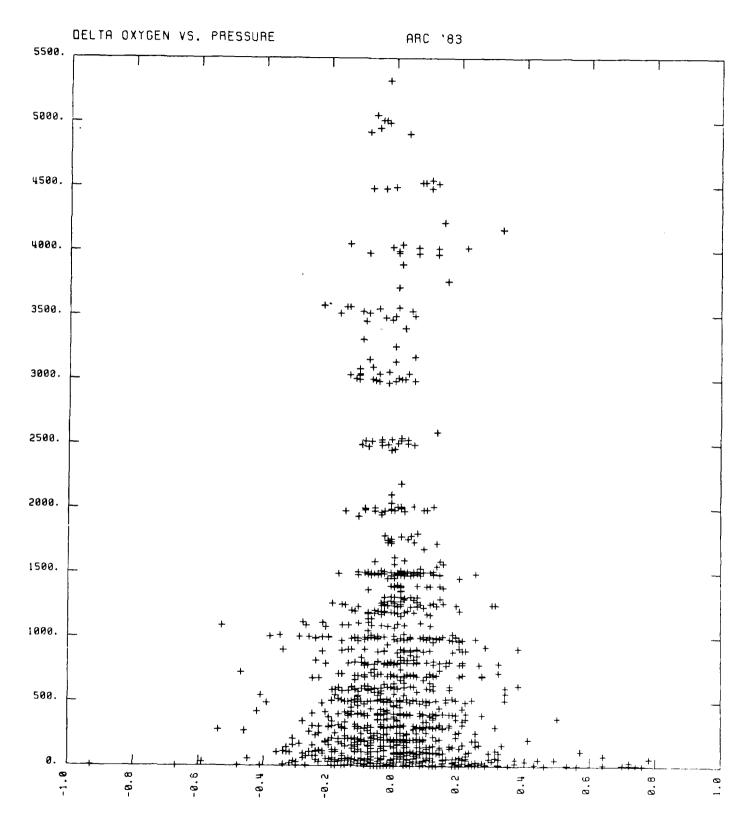
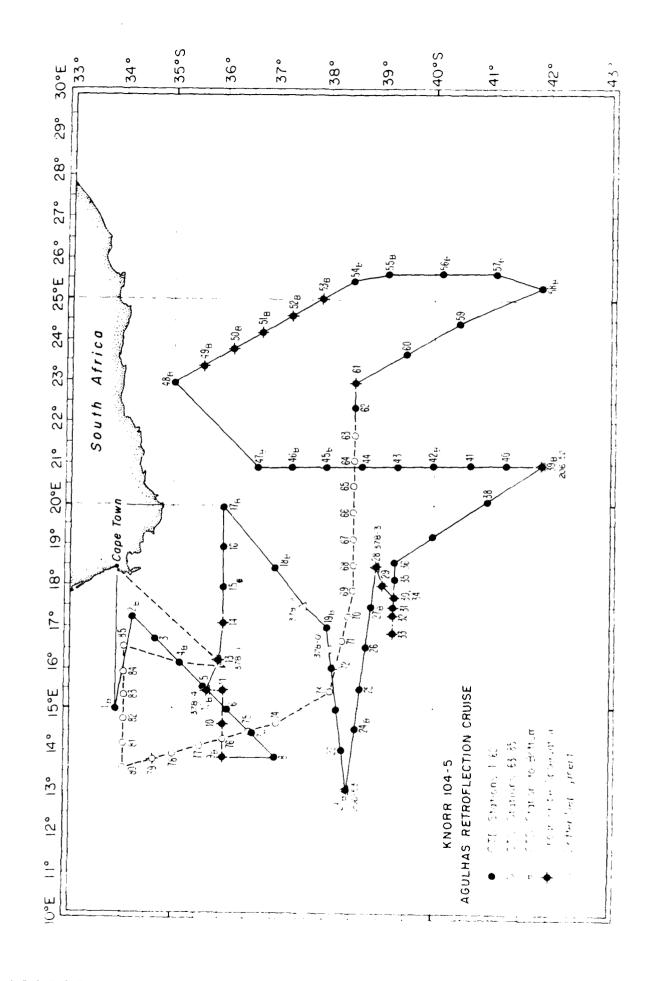


Figure III



PT TF SA PR OX os SO S 1 S 2 S 3 S4 AN ΗŻ BV DE 0 17 070 17.070 35.426 5.9 107.5 25.826 30.142 34.364 38.494 42.534 216.3 0.00 0 00 0.0 10 17.065 17 064 35.425 5.9 108.0 25.826 30.143 34.365 38.495 42.535 216.5 0.2 10 0 . 47 40 20 17 049 17 046 35 420 5.9 108.3 25 827 30 144 34 366 38 496 42 537 216.9 . 04 19 9 30 17 043 17.038 35.432 5.9 108.2 25.838 30.155 34.377 38.507 42.548 216.2 06 1.86 .09 40 16.915 16.908 35.434 5.9 108.2 25.870 30.190 34.414 38.546 42.589 213.4 39 9 3.19 5.9 106.8 26.030 30.362 34.599 38.742 42.796 198.6 50 16.188 16.180 35.419 1.1 7 09 .13 60 15.439 15.430 35.323 5.6 99.1 26.126 30.472 34.723 38.880 42.946 189.7 5 53 59 70 15.003 14.993 35.318 5.7 100.2 26.220 30.574 34.832 38.996 43.070 181.1 5.42 80 14.831 14.819 35.331 5.6 98.3 26.268 30.625 34.886 39.053 43.130 176.8 16 3.90 79 90 14.588 14.575 35.302 5.5 96.1 26 298 30.660 34.926 39.097 43.178 174.2 .18 3.12 89 100 14.347 14.332 35.254 94.5 26.314 30 680 34.950 39.127 43.212 173.0 5.4 20 2 21 99 97.8 26.354 30.733 35.015 39.203 43.299 169.7 120 13.735 13.718 35.139 5.7 . 23 2.57 119 140 13.485 13.466 35.096 5.7 97.5.26.373.30.757.35.044.39.237.43.338.168.4 1 75 27 139 160 13.270 13.248 35.058 97.3 26.388 30.777 35.068 39.265 43.370 167.5 5.7 1 57 159 30 180 12.970 12.945 35.023 5.7 95.6.26.422.30.817.35.114.39.317.43.427.164.8 2 34 179 . 33 200 12.689 12.662 35.015 90.3 26.473 30.873 35.176 39.383 43.499 160.5 5.4 2.83 199 . 37 220 12.484 12.455 35.033 87.3 26.527 30.932 35.238 39.450 43.569 155.8 5.2 2 95 . 40 219 240 12.189 12.158 35.002 5.1 84.7 26.561 30.971 35.284 39.501 43.626 153.0 2.34 239 . 43 260 11.941 11.908 34.994 5.0 83.1 26.603 31.018 35.335 39.558 43.687 149.5 2.59 . 46 258 280 11.616 11.580 34.957 5.0 82.5 26.636 31.058 35.382 39.611 43.746 146.7 .49 2.34 300 11.088 11.051 34.893 5.0 81.2 26.683 31.117 35.452 39.691 43.837 142.4 . 52 2.83 298 320 10.878 10.839 34.877 5.0 81.3 26.709 31.147 35.487 39.730 43.880 140.3 2.07 318 340 10.479 10.439 34.822 5.0 79.7 26.737 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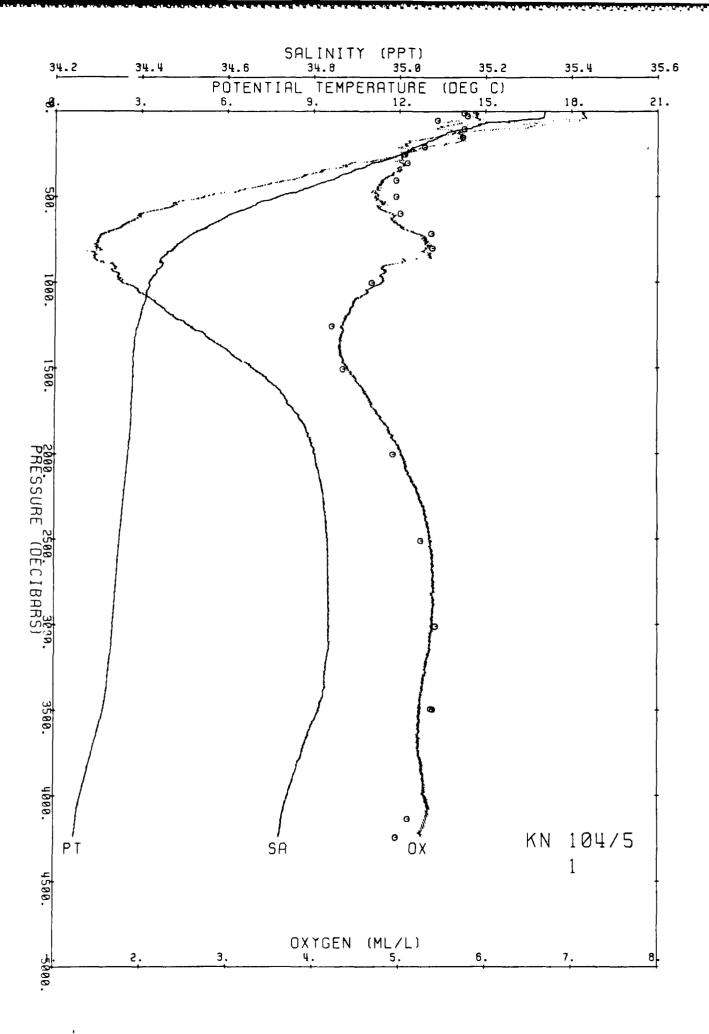
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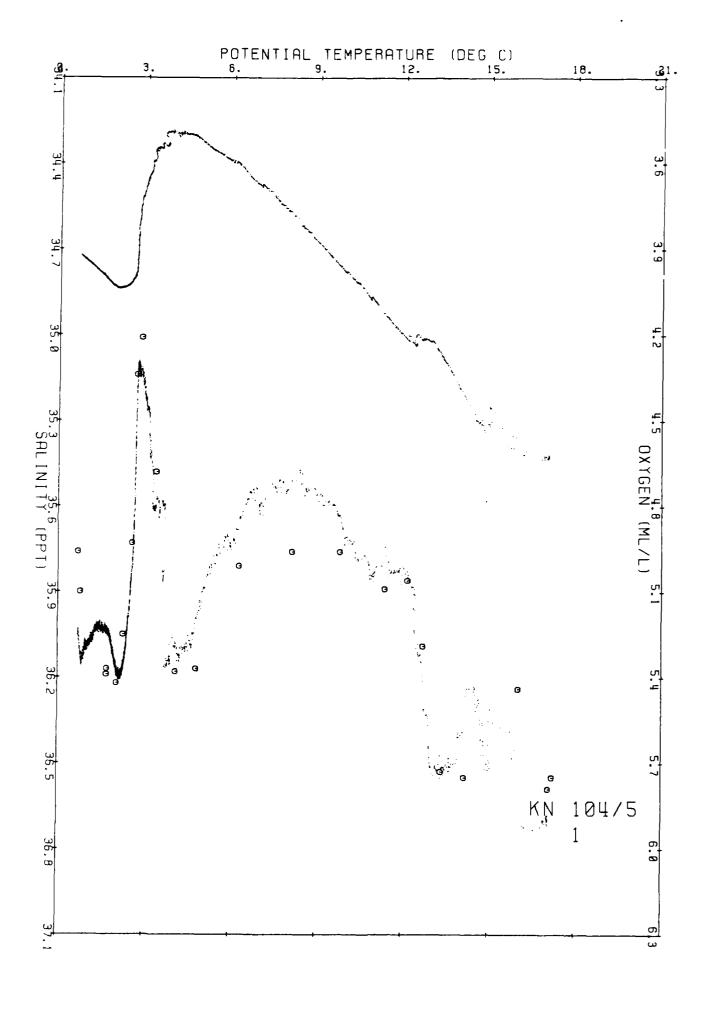
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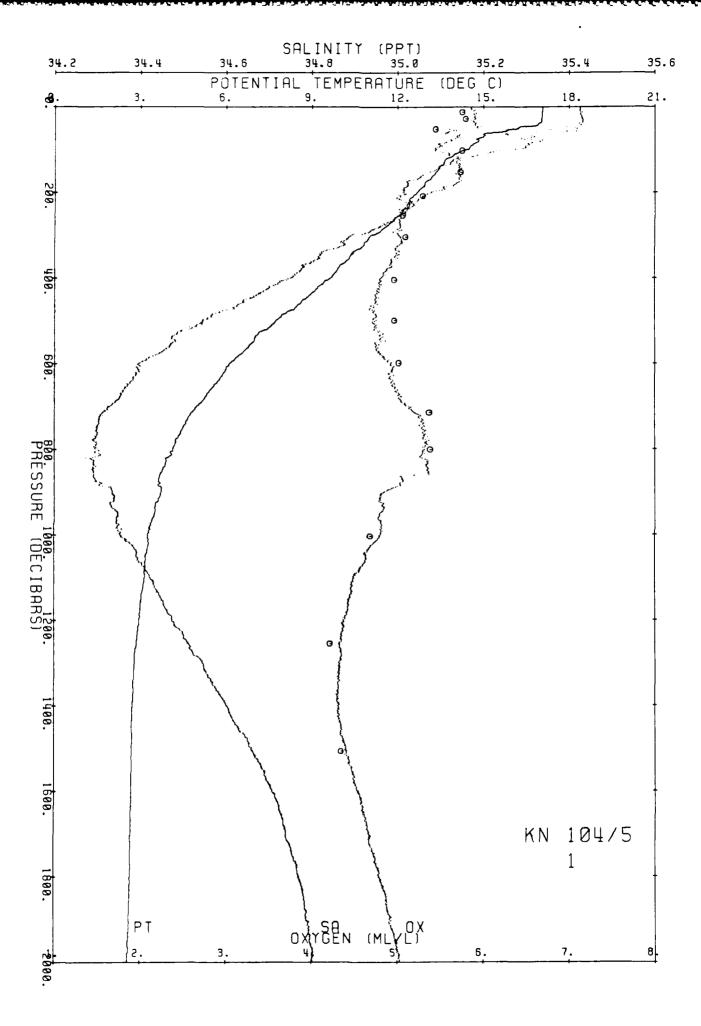
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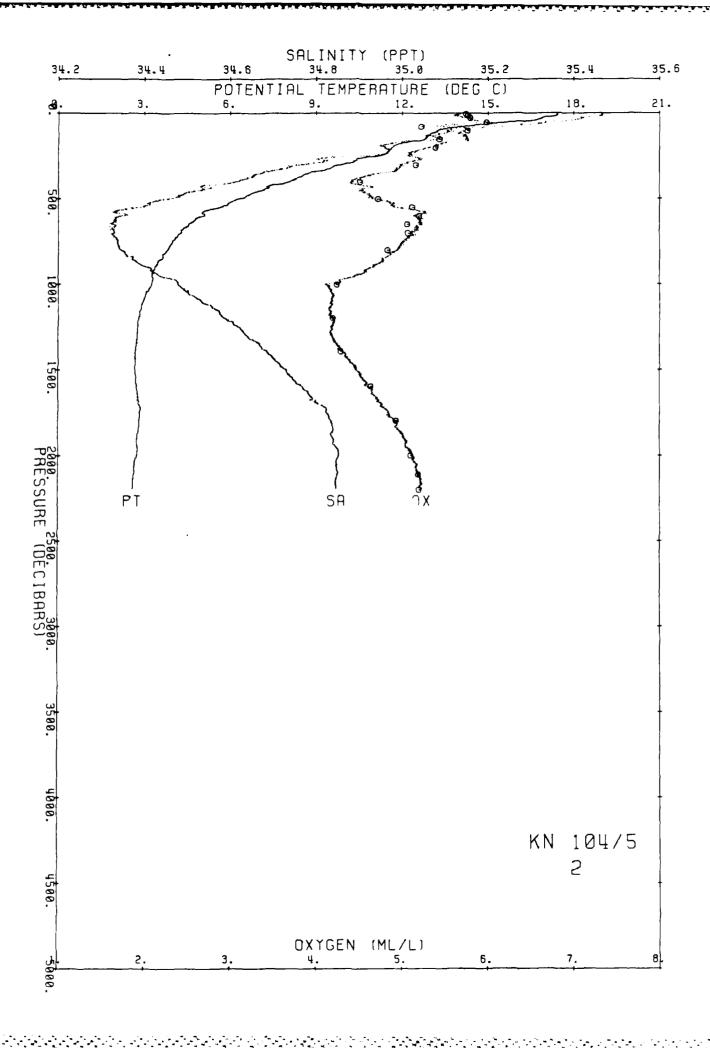
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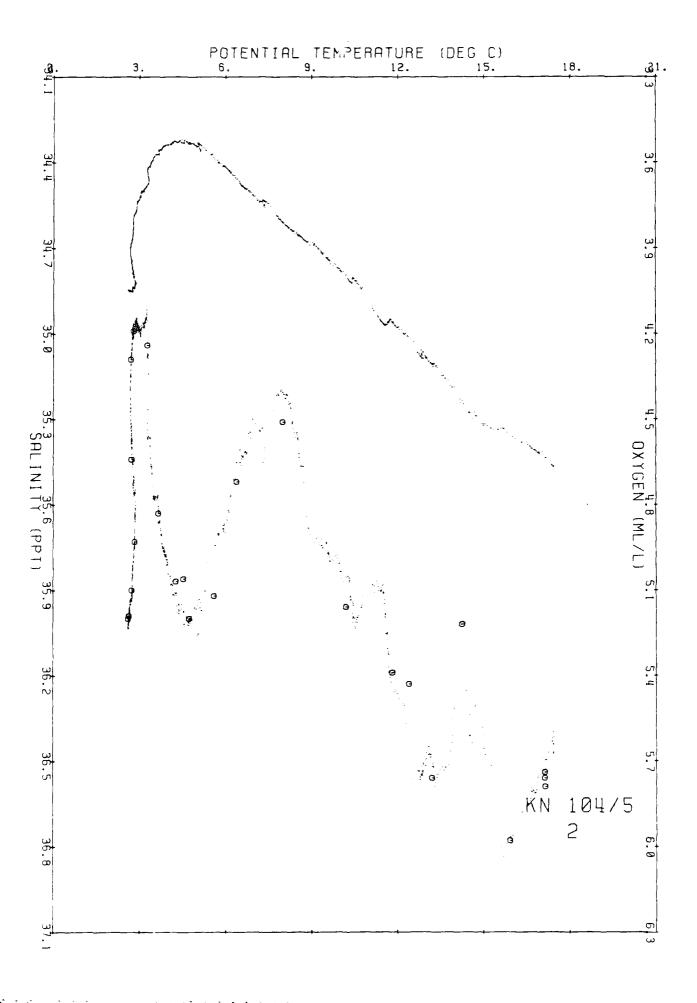
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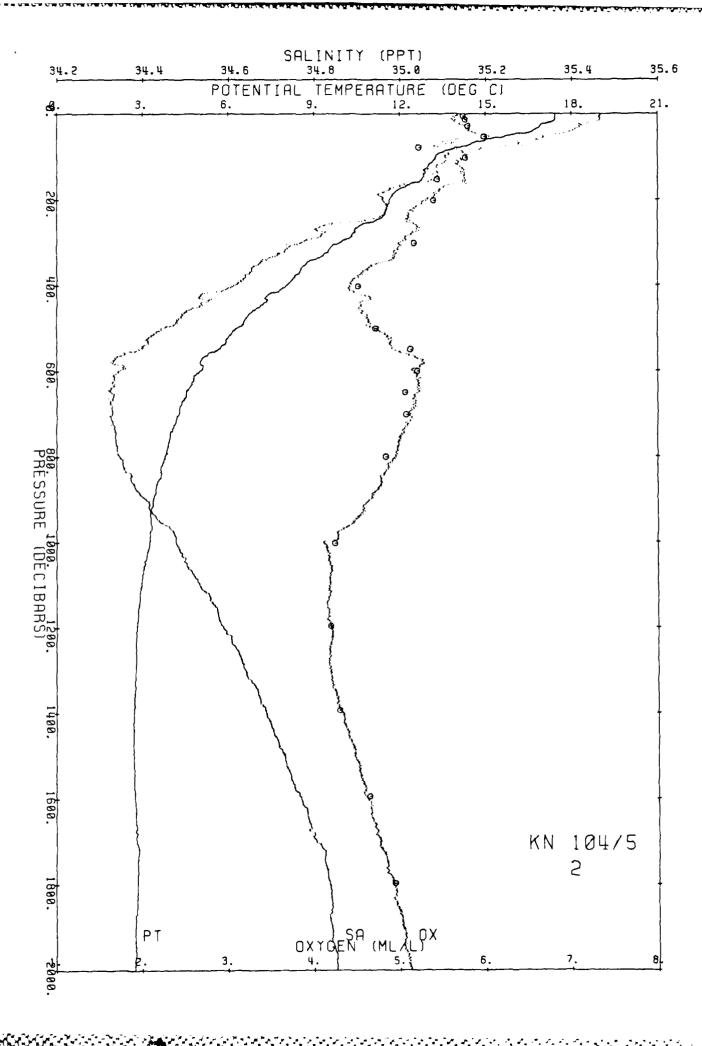
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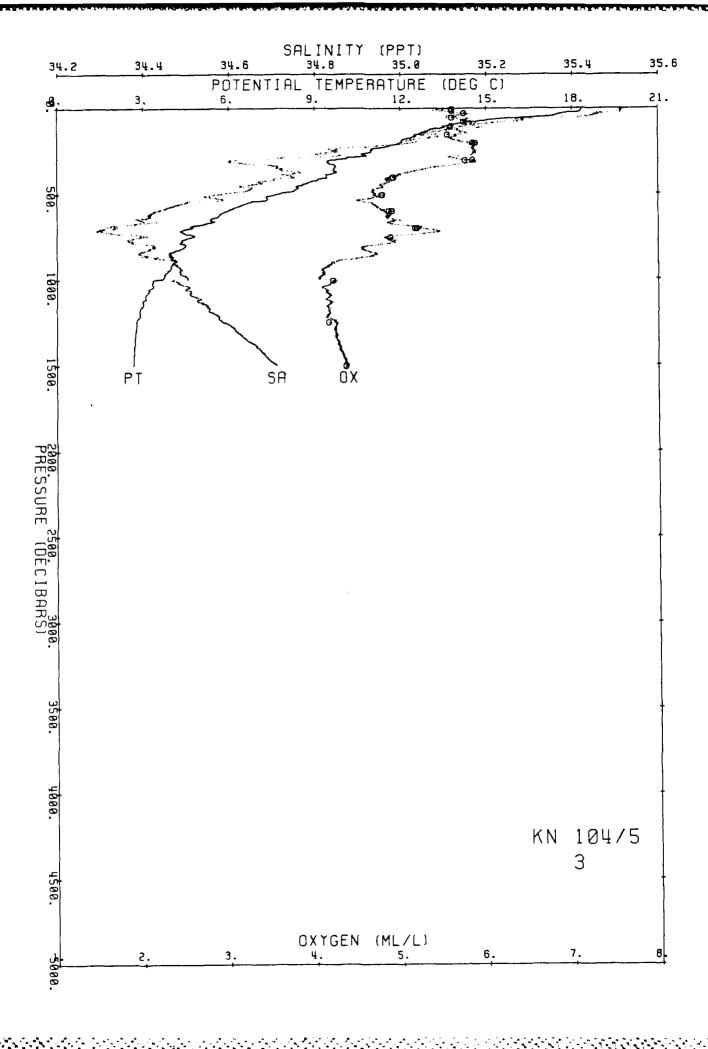
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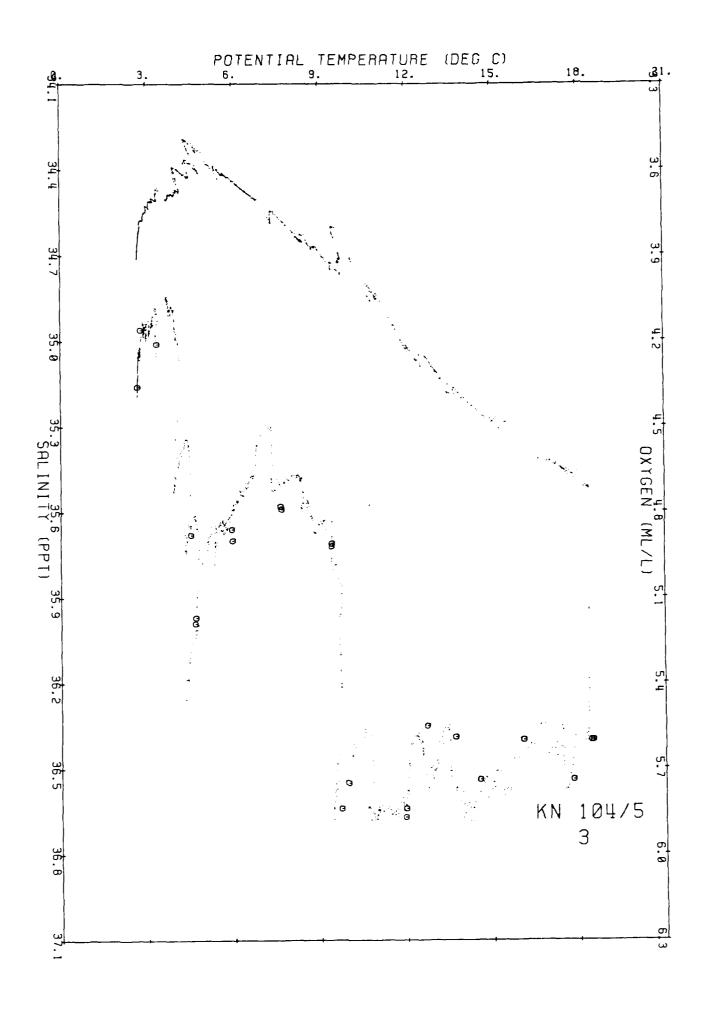
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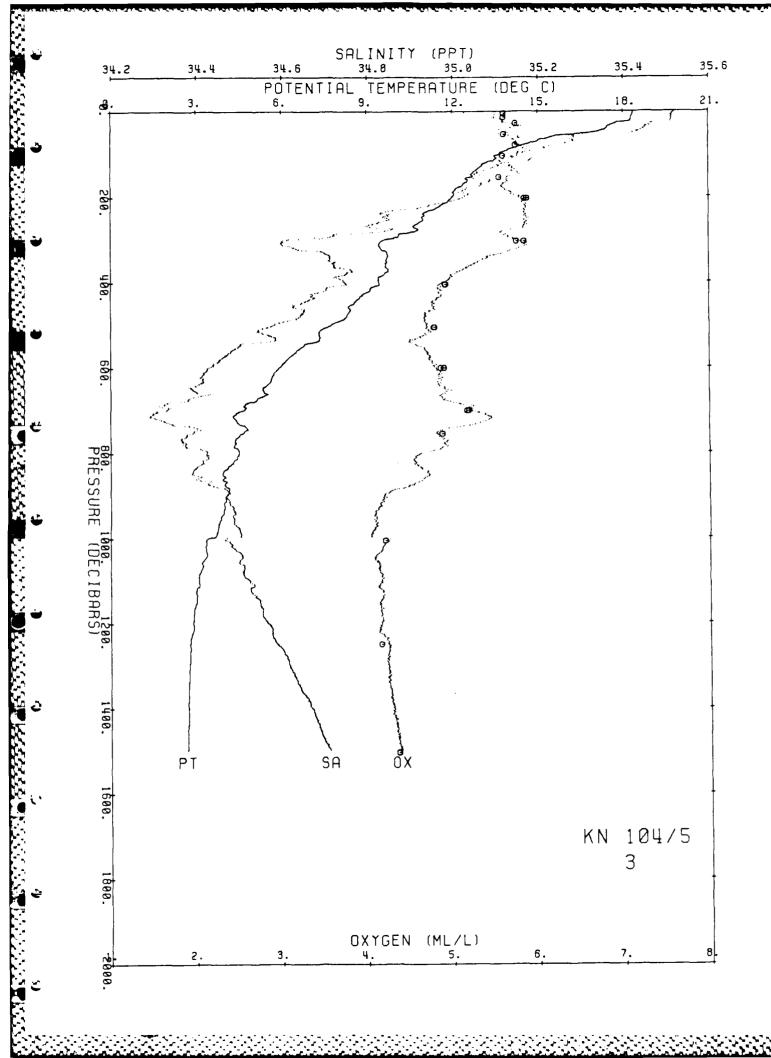
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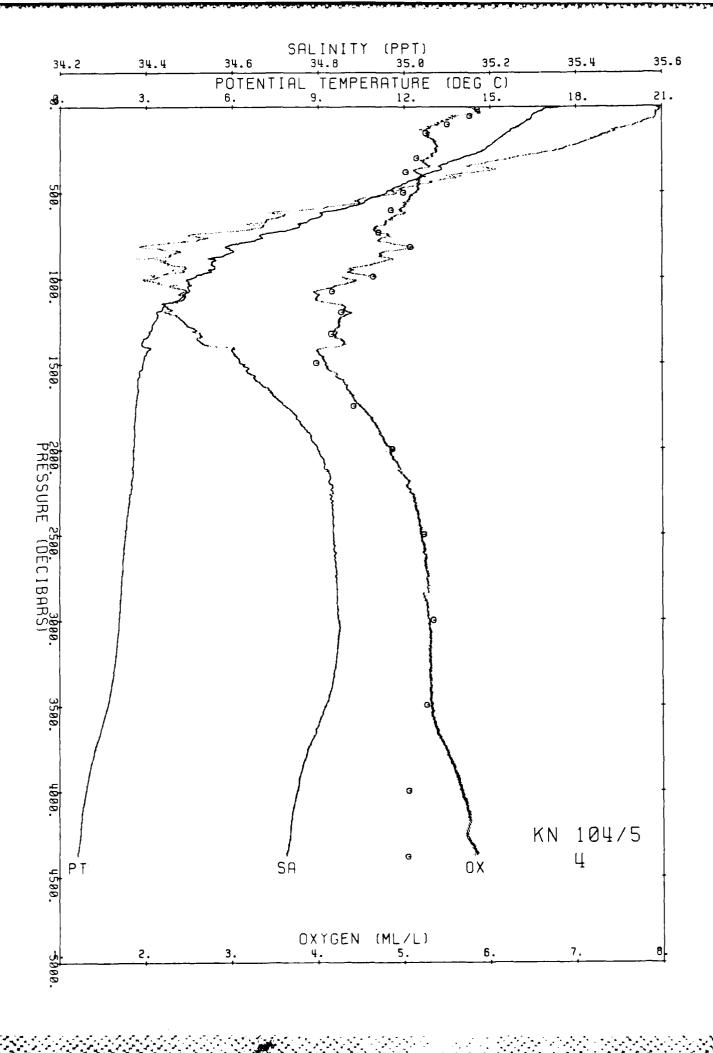
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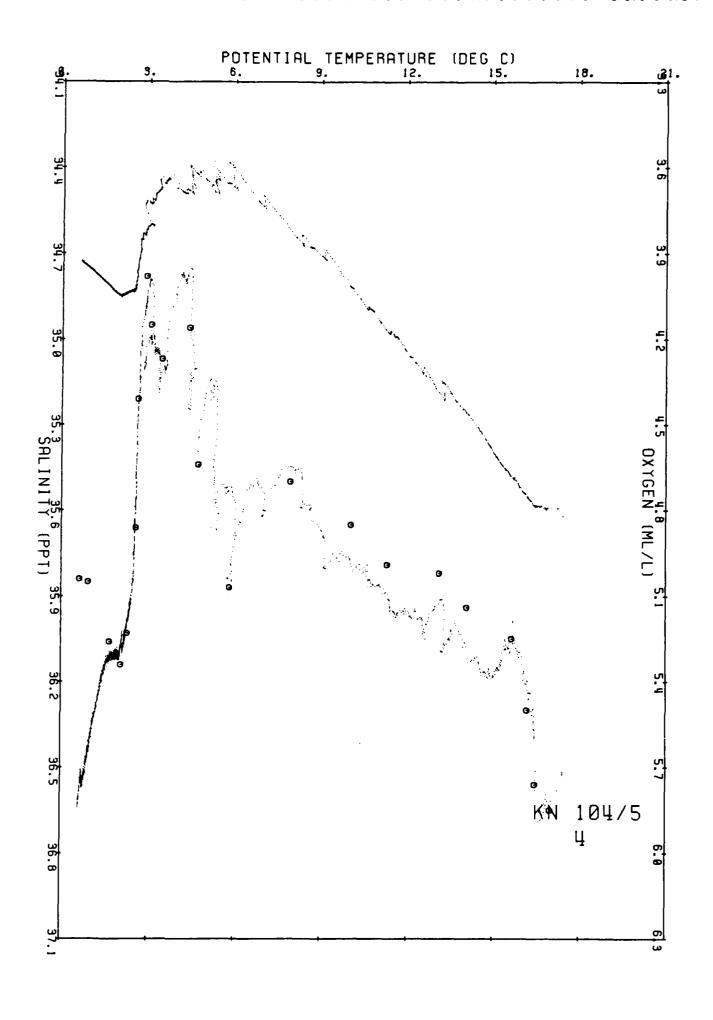
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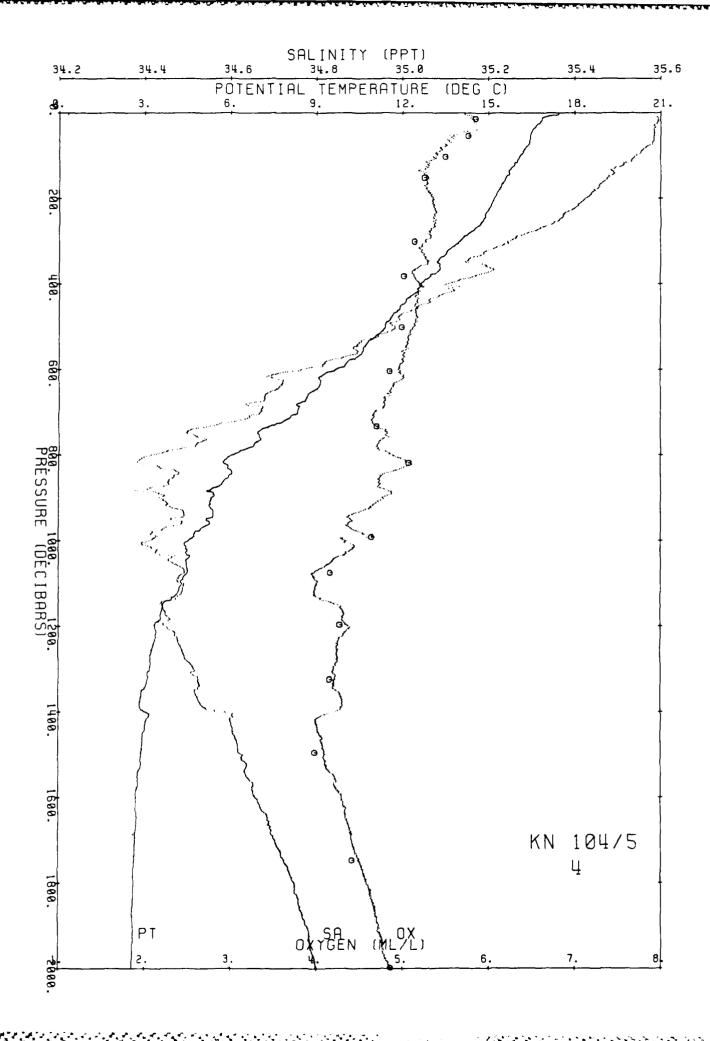
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End TE 08 SO PR PT SA OX Sl S2 53 54 AN ΗZ ΒV DE 0 17.134 17 134 35.607 -9.0 -9.0 25.949 30.264 34.483 38.611 42.649 204.5 0.00 0.00 0.0 10 17:129 17 128 35:603 5:4 99.8 25.948 30.262 34.482 38.610 42.647 205.0 . 02 5 6 103.0 26.043 30.365 34.592 38.726 42.771 196.4 30 16.654 16.650 35.594 5.7 104.0 26.054 30.377 34.605 38.740 42.786 195.6 40 16 511 16 505 35 587 5.7 103.8 26.083 30.408 34.639 38.776 42.824 193.2 50 16.482 16.474 35.587 5.5 100.3 26.090 30.416 34.647 38.785 42.833 192 9 60 16 459 16 450 35 586 5.4 98.6 26.095 30.422 34.653 38.791 42 840 192.8 70 16.455 16.444 35.586 5.4 98.3 26.097 30.423 34.654 38.793 42.842 193.0 80 16.452 16.439 35.585 5 4 98.3 26.097 30.424 34.655 38.793 42.842 193 3 90 16 451 16 436 35 884 5.4 98.8 26.097 30.423 34.655 38.793 42 842 193 7 22 89.7 100 16.450 16.434 35.583 5 4 98.5 26.097 30.423 34.655 38.793 42 842 194 0 99 6 . 22 120 16.451 16.431 35 584 5.4 98.6 26.098 30.425 34.656 38.795 42.844 194.6 47 119.5 23 139 5 140 16.453 16.430 35.583 5.5 99.2 26.097 30.424 34.656 38.794 42.843 195 3 27 30 160 16.455 16.429 35.583 5.5 100.0 26.098 30.425 34.656 38.795 42.844 196 0 31 22 159.4 180 16.461 16.432 35.583 5.5 99.9 26.097 30.424 34.655 38.794 42.843 196 8 . 35 32 179.3 200 16.463 16.431 35.584 5.5 100.6 26.098 30.425 34.656 38.795 42.844 197 4 . 39 39 199.2 220 16.465 16.430 35.583 5.6 101.1 26.098 30.424 34.656 38.795 42.844 198 1 .43 - 27 219.1 240 16.464 16.425 35.582 5.6 101.5 26.098 30.425 34.656 38.795 42.844 198 8 . 47 24 239.0 51 260 16.458 16.416 35.581 5.6 101.7 26.099 30.426 34.658 38.797 42.846 199.4 280 16.328 16.283 35.558 5.5 100.5 26.112 30.442 34.676 38.817 42.869 198.7 45 258.9 .55 1.48 278.8 300 16:011 15:964 35:518 5 5 98:3 26:155 30:491 34:731 38:877 42:934 195:2 320 15:736 15:686 35:482 5:5 98:4 26:191 30:532 34:776 38:928 42:990 192:3 .59 2.65 298.7 63 2 42 318 6 340 15.507 15 454 35.455 5 5 97.9 26.223 30.567 34.816 38.972 43.037 189.9 360 15.361 15.305 35.438 5 5 98.4 26.243 30.590 34.842 39.001 43.068 188 5 .67 2 27 338.5 .70 1.82 358.4 380 15.307 15.249 35.436 5.6 99.3 26.254 30.603 34.855 39.015 43.083 188 1 .74 1.34 378.3 400 15.253 15.191 35.427 99.2 26.260 30.610 34.863 39.024 43.093 188.1 5 6 78 99 398 2 99.2 26.260 30.640 34.927 39.097 43.175 185.1 .87 450 14.768 14.700 35.346 5 5 1 76 447 9 500 13.941 13.868 35.255 89.6 26.413 30.788 35.067 39.251 43.344 175 7 497 6 5 2 96 2 68 550 13.060 12.984 35.160 5 2 88.8 26.521 30.914 35.209 39.410 43.519 166 1 1.05 2 71 547 3 600 12.578 12.496 35.128 5.1 85.9 26.593 30.996 35.301 39.511 43 628 160 2 1.13 2 20 597 0 650 11.573 11.489 34 998 5 1 82.8 26.685 31.108 35.434 39.664 43 801 151 6 1 21 2 56 646 6 700 11.004 10.916 34.940 4 9 79.3 26.745 31.180 35.518 39.759 43.907 146.4 1.28 2 06 696 750 10.159 10.069 34.844 4 9 77.4 26.819 31.273 35.629 39.888 44.053 139 3 1 35 2 34 745 9.555 34.789 800 9.648 4.7 74.2 26.863 31.329 35.695 39.965 44.140 135 5 1 42 1 82 8.207 34 661 4.5 68.0 26.977 31,474 35.871 40.169 44.373 124 3 1 55 900 8.303 2.09 894 6.279 63.4 27.115 31.661 36.105 40.450 44.698 108.6 1.67 1000 6.186 34.476 4.200 5 5 1100 4.115 34.262 75.6 27.187 31.787 36.284 40.680 44.976 97.7 1.77 1200 4.197 4.103 34.378 4 7 64.6 27.281 31.880 36.376 40.771 45.067 90.0 1.87 1.70 1191 8 4.4 3.748 3.649 34.426 59.7 27.365 31.976 36.483 40.889 45.196 81.7 1.95 1.75 1290 8 1300 3.399 3.295 34.451 57.3 27.420 32.039 36.556 40.970 45.285 76.3 2.03 1400 1 44 1389 1480 3.163 3.055 34.496 4.2 55.8 27.478 32.104 36.626 41.046 45.367 70.7 2.09 1 61 1468 PR PT 02 NЭ N2 NH4 TE SA SI PO SO Sl S 2 S 3 4 17.089 17.088 35.607 5.82 5.0 0.25 1.6 0.03 1.12 25,960 30.276 34.496 38.624 42.662 3.9 13 17.065 17.063 35.605 4.2 0.21 1.3 0.04 1.64 25.965 30.281 34 501 38.630 42.669 13.2 27 16.657 16.653 35.597 4.9 0.21 1.8 0.05 1.78 26,056 30,379 34.607 38.742 42.787 27.1 53 16.476 16.467 35.589 5.64 5.3 0.27 2.7 0.19 0.75 26,093 30.419 34.650 38.788 42.837 52.4 0.31 2.9 0.35 103 16.456 16.439 35.587 5.51 4.8 0.54 26,098 30.425 34.656 38.795 42.844 203 16.464 16.431 35.585 5.5 3.3 1 36 26.099 30.426 34.657 38.796 42.845 200 4 203 16:465 16:432 35:585 5:55 0.32 0.33 26.099 30.425 34.657 38.795 42.844 5.7 4.2 0.85 26,133 30.465 34.701 38.845 42.898 292 16:202 16:155 35:546 26.133 30.464 34.701 38.844 42.898 292 16:200 16:153 35:545 5:36 0.36 0.02 349 15.485 15.431 35.456 5.6 4.7 0.54 26,229 30.574 34.823 38.979 43.045 350 15.477 15.422 35.455 5.31 0.42 26,230 30.575 34.825 38.981 43.047 397 15.294 15.232 35.439 4.9 3.5 2.75 26,260 30.609 34.862 39.021 43.090 397 15.293 15.231 35.439 5,44 0.43 26.260 30.609 34.862 39.022 43.091 496 14.205 14.132 35.291 6.2 0.64 7.5 0.6\$ 26,385 30.755 35.029 39.208 43.296 600 12.568 12.486 35.124 5.01 6.8 0.79 10.7 0.54 26,592 30.995 35.300 39.510 43.628 594.9 700 11.063 10.975 34.951 9.1 1.07 14.4 0.75 26,743 31.177 35.514 39.754 43.900 593.1 800 9.647 9.554 34.793 4.76 10.5 1.39 18.6 0.91 26.866 31.332 35.699 39.968 44.144 792.5 898 8.251 8.155 34.657 17.3 1.67 22.6 3.31 26.982 31.480 35.878 40.178 44.382 889.2 990 6.597 6.503 34.503 4.63 21.7 2.00 25.8 2.51 27.095 31.633 36.070 40.407 44.648 980.6 1094 4.245 4.160 34.265 20.9 2.18 29.5 1.09 27,185 31,784 36,279 40,674 44,969 1083,4 1202 4.140 4.046 34.369 4.76 31.3 2.40 28.8 0.82 27.280 31.880 36.378 40.774 45.072 1190.0 1302 3.791 3.692 34.425 42.2 2.56 32.5 1.35 27,360 31.970 36.476 40.881 45.186 1287.9

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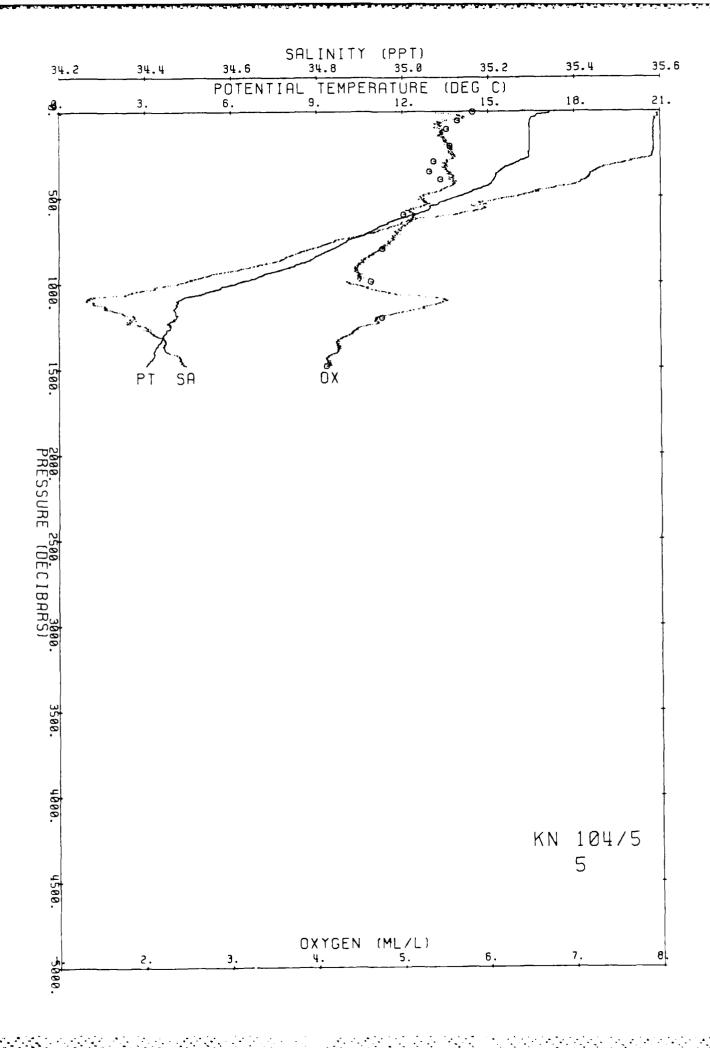
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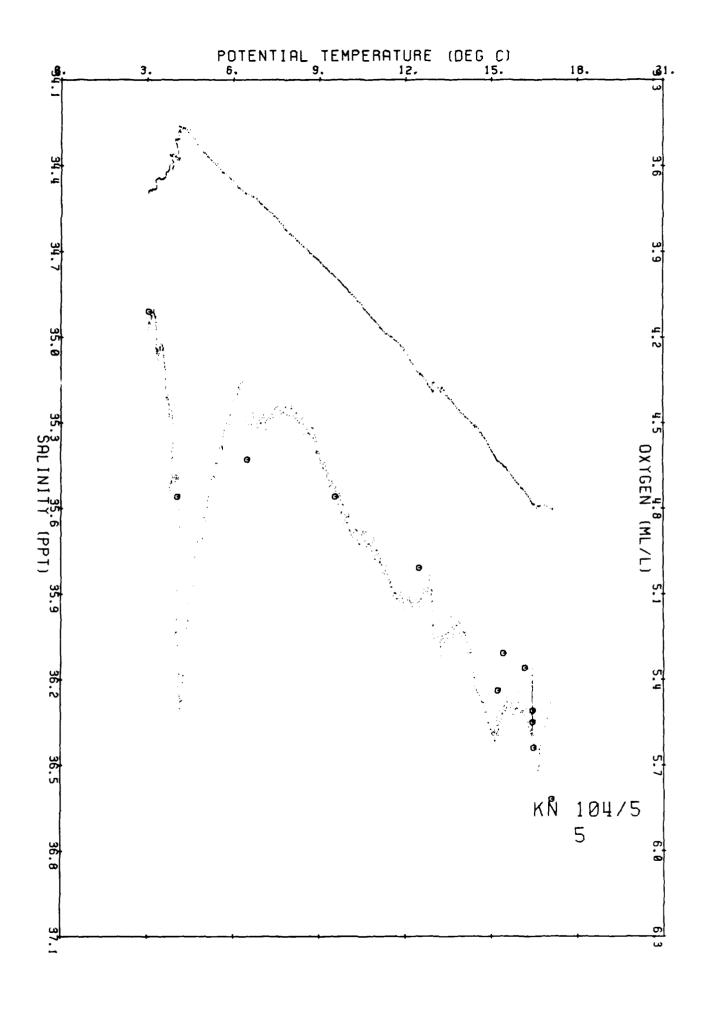
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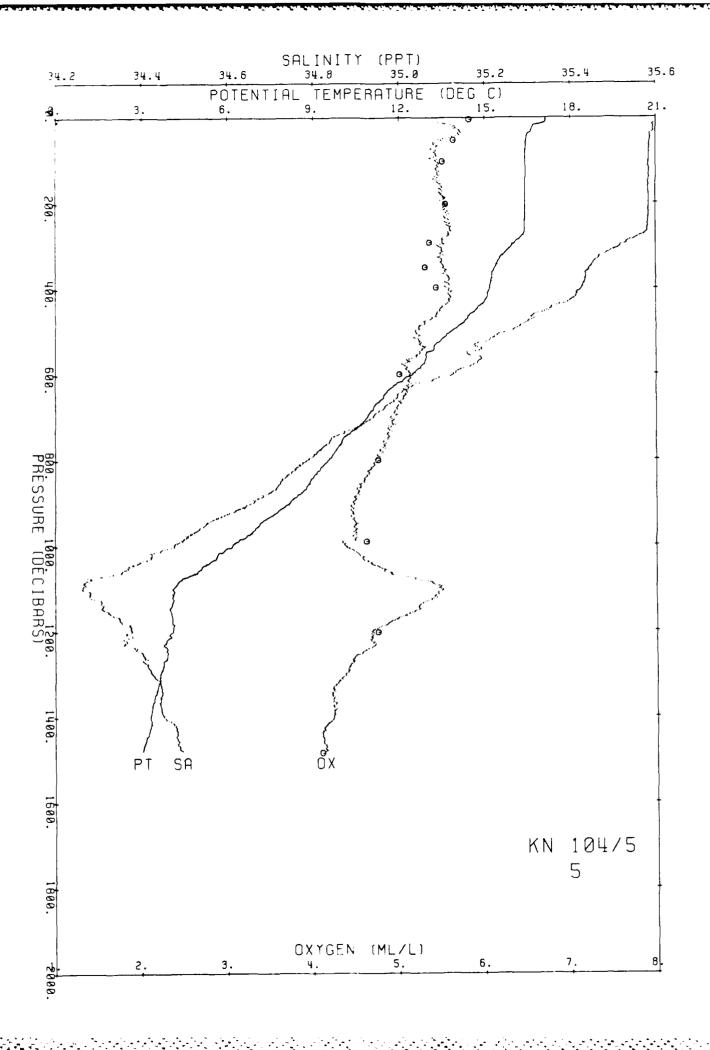
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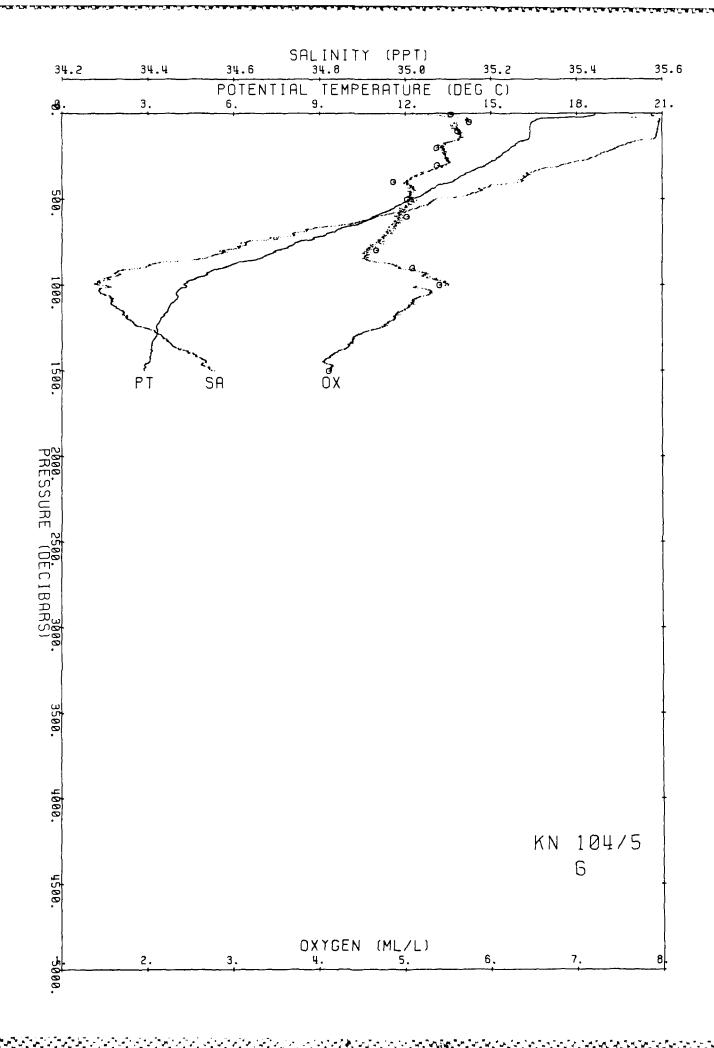
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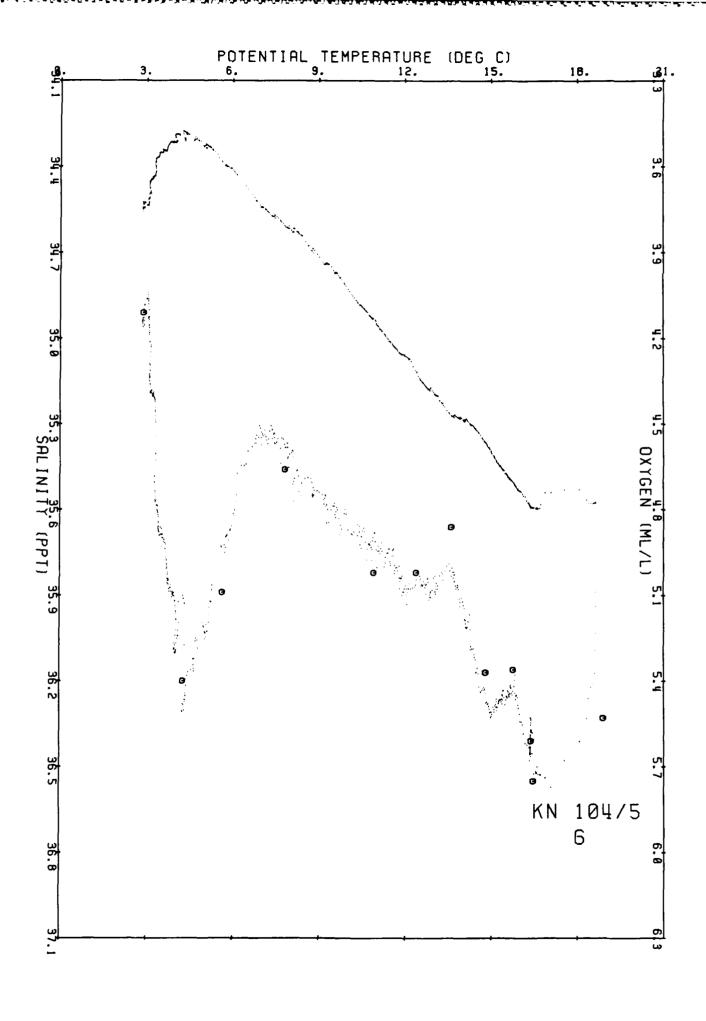
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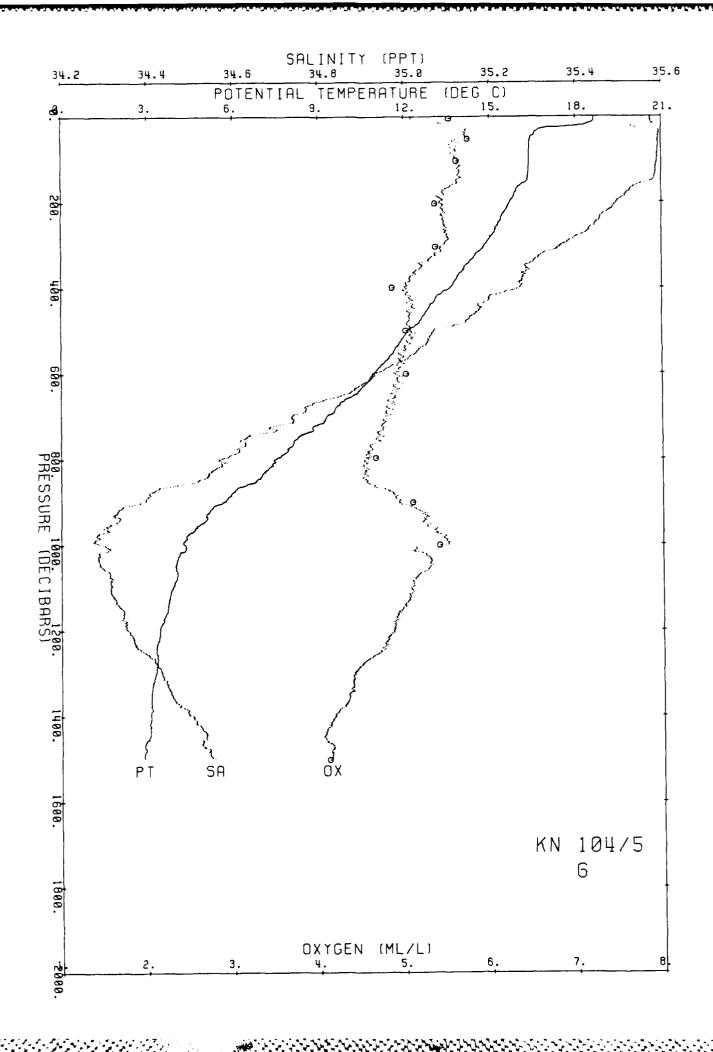
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2000 2.720 .572 34.791 4.8 46.8 1.96 2100 2.703 2 547 34.803 4.9 46.3 2.01 .63 2080.0 524 34.810 65.9 27.776 32.414 36.948 41.379 45.710 2.689 46.1 2.05 5.0 66.5 27.788 32.427 36.962 41.395 45.728 5.1 67.4 27.800 32.441 36.978 41.412 45.746 2300 2 642 7 468 34.819 45.4 2.10 69 2276.9 2400 2.591 2.408 34.828 .70 2375.3 44.6 2.14 2500 2.554 2.363 34.833 68.4 27.808 32.450 36.988 41.424 45.758 44.3 2.19 .58 2473.7 2600 2.511 2.311 34.836 5.2 68.7 27.815 32.459 36.998 41.434 45.771 44.0 2.23 .56 2572.0 2.467 . 258 34.838 69.1 27.821 32.466 37.007 41.444 45.782 43.8 2.27 2700 .55 2670.2 2800 2.432 2.214 34.840 5.2 69.1 27.826 32.472 37.014 41.453 45.792 43.6 2.32 .51 2768.4 5.2 69.2 27.832 32.480 37.022 41.463 45.802 2900 2.172 34.843 .53 2866.6 2.399 43.4 2.36 .127 34.842 69.3 27.835 32.484 37.028 41.469 45.810 43.5 2.41 3000 2.364 3200 2 299 2 043 34 844 5.2 68.9 27.844 32.494 37.041 41.484 45.827 43.3 2.49 49 3160 9 1.952 34.842 5.2 68.3 27.849 32.503 37.051 41.497 45.842 3400 2.227 43.3 2.58 46 3356.8 5.1 3600 2.062 1.770 34.825 67.4 27.850 32.508 37.062 41.513 45.863 42.8 2.66 .53 3552.6 67.1 27.850 32.516 37.077 41.535 45.891 3800 1.825 1.518 34.802 5.2 41.4 2.75 .64 3748.2 1.231 34.776 67.4 27.850 32.524 37.093 41.559 45.923 4000 1.552 4200 1.303 967 34 753 5 3 67.7 27.849 32.531 37.108 41.581 45.952 17 7 2 91 .66 4138.8 4400 1.179 .825 34.741 5.2 67.1 27.849 32.535 37.116 41.593 45.968 .51 4333.9 37.0 2.98 4600 1.136 .760 34,735 697 34,731 5.1 65.6 27.848 32.536 37.119 41.598 45.975 63.2 27.849 32.539 37.124 41.604 45.983 37.1 3.06 .34 4528.8 4800 1.094 4.9 37.0 3.13 .38 4723.5 601 34.722 4.9 62.4 27.848 32.541 37.128 41.611 45.992 1.014 36.5 3.19 PR TE SA 02 so PT SI PO X3 N2 NH4 51 S 2 83 4 16.708 16.707 35.463 5.82 3.0 9.28 0.7 0.01 0.20 25.940 30.263 34.491 38.626 42.671 4.6 0.24 1.1 4.7 0.24 1.1 3.2 0.22 0.7 13 16.712 16.710 35.462 5.10 0.01 25.939 30.262 34.489 38.624 42.669 0.25 26.076 30.410 34.648 38.793 42.848 26.120 30.455 34.695 38.843 42.900 28 16.090 16.086 35.451 5.10 0.02 56 15.968 15.959 35.470 0.03 4.6 0.24 1.6 0.07 4.7 0.34 3.1 0.64 4.8 0.40 4.7 0.02 6.6 0.77 4.0 7.7 1.07 4.6 81 15 811 15 798 35 457 5 87 105 15 169 15 153 35 407 5 62 26.146 30.485 34.728 38.878 42.938 80.2 26.253 30.603 34.858 39.019 43.090 104.2 206 14.173 14.143 35.235 5 62 0.25 26.339 30.710 34.983 39.163 43.251 306 12.726 12.684 35.097 5.01 26.532 30.931 35.233 39.440 43.554 303.8 408 10.964 10.913 34.905 5.12 0.25 26.718 31.154 35.492 39.734 43.882 509 9.175 7.648 9.118 34.700 4.96 9.5 1.45 26.865 31.341 35.718 39.997 44.181 7.587 34.549 4.80 13.9 1.76 8.3 26 981 31 493 35 904 40 217 44 434 609 603.4 4.616 4.552 34.293 5.37 27.165 31.753 36.239 40.624 44.910 1009 3.478 3 406 34 289 5 22 30.9 2 42 18.5 27, 280, 31, 898, 36, 413, 40, 826, 45, 139 999 1 3 230 1199 3.145 34.412 4.43 2.59 26.7 27 403 32.027 36.547 40.966 45.285 1187.0 44.5 1409 3.028 .927 34.558 4.10 56.2 2.67 33.7 27.539 32.168 36 693 41.116 45.439 1393 1610 2.816 2.701 34.651 4.22 58.3 2.45 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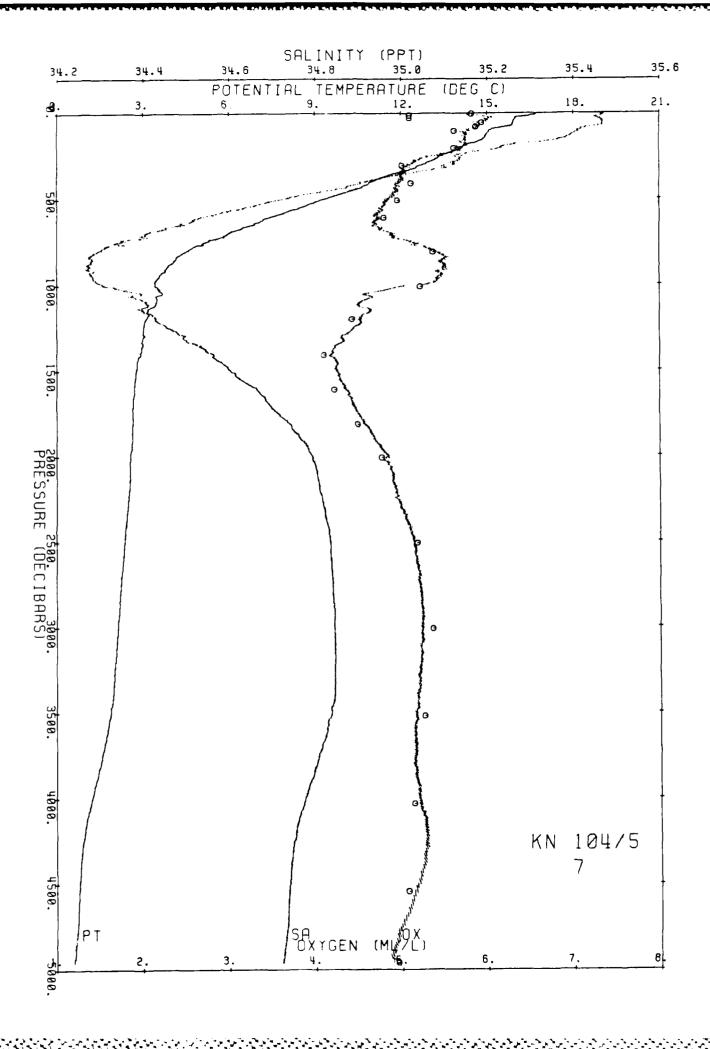
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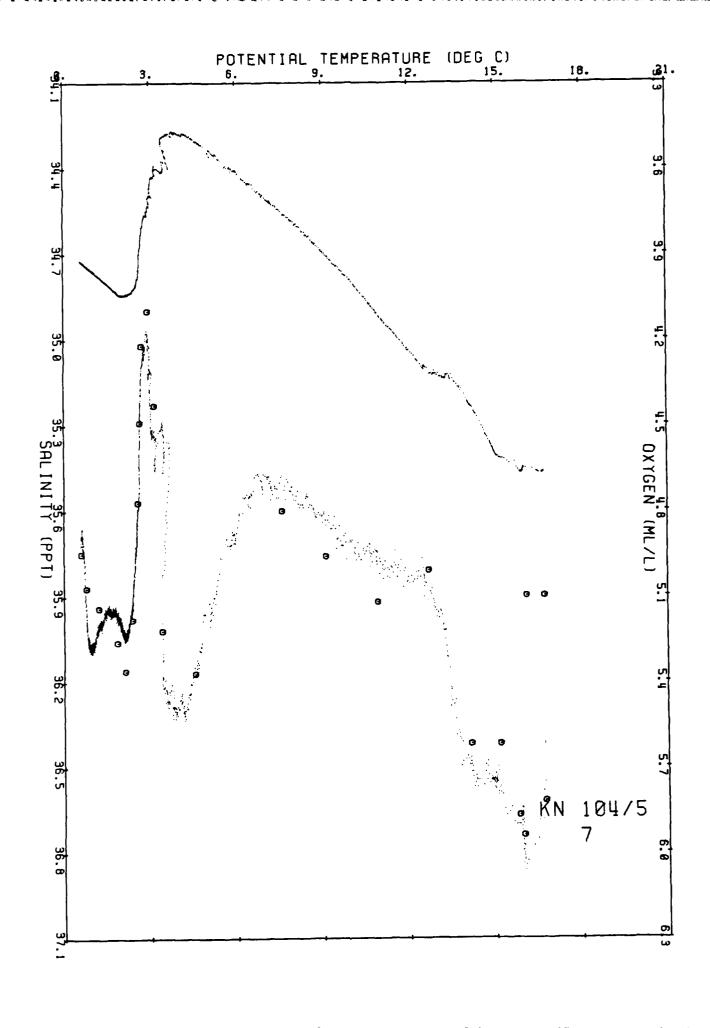
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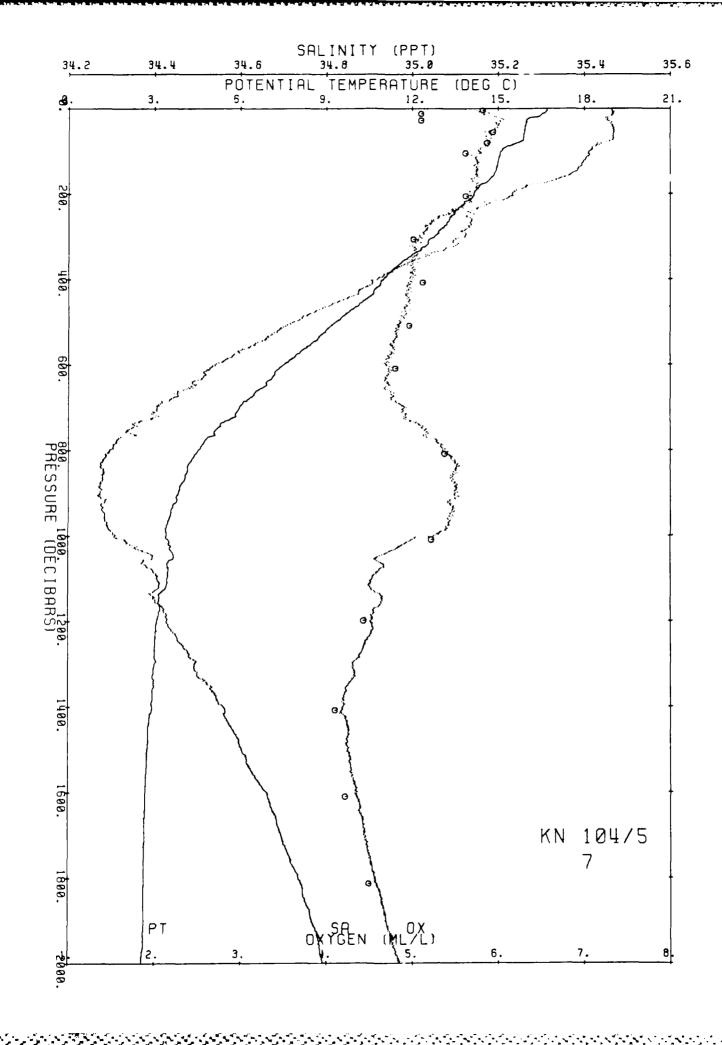
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Ship KN Cruise 1045 Station Cast 8 1 DT 37 48.54 E Start 1.02 S 13 2235 83/11/16 a.t. End 37 2.60 S 13 49.12 E 25 PR TE OX os so Sı PT SA S 2 S 3 54 AN ΗZ BV DE 5.7 103 6 25 887 30.207 34.432 38 565 42.608 210 4 0.00 0 16.868 16.868 35 443 0 0 10 16.871 16.869 35.444 5.7 104.7 25 887 30.207 34.432 38.565 42.608 210.8 32 20 16.791 16.788 35.425 5.8 105.9 25.892 30.214 34.440 38.574 42.618 210.7 30 16.076 16.071 35.417 6.0 107.9 26.053 30.387 34.626 38.771 42.827 195.7 40 16.008 16.002 35.409 6.0 107.2 26.063 30.398 34.638 38 785 42.842 195 1 5.9 106.3 26.078 30.417 34.660 38.810 42.870 194.0 50 15.832 15.824 35 376 6.0 107.1 26.101 30.443 34.689 38.841 42.904 192.1 60 15.672 15.663 35 358 70 15.140 15 129 35.303 5.9 104.9 26 178 30.530 34.785 38.947 43.019 185.1 4 93 80 14.389 14.377 35 228 5.9 103.4 26.284 30.650 34.919 39.095 43.179 175.2 90 14.264 14.251 35 237 5 9 101.9 26.318 30.686 34.958 39.136 43.222 172.3 3 27 89 100 14.184 14.169 35 231 5.8 101.2 26.331 30.700 34.974 39.153 43.241 171.4 . 19 2 01 99 6 120 13.825 13.808 35.169 5.9 100 8 26 359 30.736 35.016 39 202 43.297 169.3 . 23 2 1 3 119 140 13.377 13.358 35.088 5 8 98 7 26.389 30.775 35.064 39.259 43.362 166.9 . 26 2 23 139.4 160 13.008 12.987 35.027 5.8 98.0 26.417 30.811 35.107 39.309 43.419 164.7 . 29 2.14 159 . 33 179.3 180 12.986 12.961 35.055 5.5 93.7 26.444 30.838 35.135 39.337 43.447 162.7 2.05 200 12.753 12.726 35.044 5.4 91.5 26.482 30.881 35.183 39.389 43.503 159.6 2 48 199 2 . 36 . 39 220 12.533 12.504 35.049 5.3 88.0 26.530 30.933 35.239 39.449 43.567 155.5 2 76 219 1 42 240 12 352 12 320 35 046 5 3 86.0 26.564 30.970 35.280 39.493 43.615 152.8 2.32 239.0 . 45 . 48 260 12.088 12 054 35.023 5 1 85.3 26.597 31.009 35 324 39.543 43.669 150.1 2.34 25R 9 280 11.904 11.868 35.009 5.2 85.0 26.622 31.038 35.356 39.579 43.709 148.2 2 01 278 B . 51 300 11.587 11.549 34.977 5.1 83.1 26 657 31.080 35.404 39.633 43.769 145.2 2 41 29A 7 81.7 26.693 31.125 35.458 39.695 43.839 142.0 320 11 168 11 128 34 923 5 0 . 54 2 46 318 5 340 10.947 10.905 34.906 5.0 80.7 26.720 31.157 35.495 39.736 43.885 139.8 . 57 2 1 2 33R 4 79.4 26.746 31.190 35.535 39.783 43.938 137.6 360 10.624 10 580 34.865 5 0 . 59 2.11 358.3 380 10.284 10 239 34.827 79.4 26.776 31.227 35.579 39.835 43.997 135.0 5 0 . 62 2.27 37B 2 9.902 34.785 77.9 26.801 31.260 35.619 39.882 44.050 132.8 9.949 400 4 9 . 65 398.1 2.09 9.311 9 261 34 710 75.2 26.849 31.322 35.696 39.972 44.154 128.8 450 4 8 .71 1.84 447 8 72.0 26.927 31.423 35.819 40.117 44.319 121.4 500 8.323 8 271 34 610 4 7 . 78 2.35 497.4 550 7.548 7.593 34.566 4.7 69.8 26.993 31.505 35.916 40.229 44.446 115.3 84 547 2.16 6.770 6 714 34 490 4 7 68.2 27.056 31.589 36.021 40.354 44.590 109.0 600 . 89 596 2.17 650 6.050 5.992 34.433 4 7 68.3 27.106 31 657 36.106 40 456 44.708 104.0 .94 1.95 646.4 700 5.284 5 226 34 368 5 0 71.3 27.148 31.719 36.187 40.555 44.825 99.5 1.00 1.86 696 750 4.994 4.933 34 373 5 0 70 7 27.186 31.764 36.239 40.614 44.891 96.0 1.04 1.64 745.6 800 4.580 4.518 34.348 5 0 68.9 27.213 31.801 36.287 40.672 44.959 93.3 1.09 1.48 795.2 900 4.037 3 969 34 362 4 9 66.8 27.282 31.885 36.384 40.783 45.082 86.7 1.18 1.59 894.3 1000 3.712 3.639 34 403 62.3 27.348 31.959 36.467 40.873 45.180 80.6 1.27 1.52 3.400 1100 3.321 34.453 4.3 58.1 27 419 32.038 36.553 40.967 45.281 74.1 1.34 3.039 34 495 4 2 56.6 27.478 32.105 36.628 41.048 45.369 1200 3.124 68.4 1.41 1.46 1191.4 2.999 2.907 34.543 4.1 55.5 27.529 32.158 36.684 41.108 45.431 1300 64.1 1.48 1.30 1290.3 2.934 2.835 34.600 4.1 54.4 27.581 32.212 36.739 41.164 45.489 1400 59.8 1.54 1.30 1389.2 1494 2.849 2.743 34 647 4.1 55.2 27 627 32.260 36.789 41.216 45.543 55.9 1.60 PR TE PT SA 02 SI PO NЭ N2 NH4 \$0 **S**1 S 2 S 3 5 16.909 16.908 35.448 5.80 4.5 0.24 2.7 0.01 0 30 25.881 30.201 34.425 38.557 42.599 4.6 13 16.916 16.914 35.447 4.0 0.22 2.4 0.02 0.20 25.879 30.198 34.423 38.554 42.597 12.9 29 16.383 16.378 35.429 5.1 0.20 3.1 0.01 0.20 25.991 30.320 34.553 38.694 42.744 28.3 54 15.865 15.857 35.385 5.89 5.4 0.24 3.2 0.02 0.25 26.078 30.416 34.658 38.808 42.867 53.1 104 14.224 14.209 35.243 5.73 6.1 0.43 3.6 0.32 26.331 30.700 34.973 39.151 43.239 154 13.305 13.284 35.082 0.56 3,4 0.04 26,400 30,787 35,078 39,274 43,378 152.3 204 12.789 12.761 35.045 5.39 0.73 3.6 0.02 26.476 30.874 35.175 39.381 43.494 254 12.255 12.221 35.039 0.38 26.577 30.986 35.297 39.513 43.636 0.88 3.9 0.01 304 11.395 11.357 34.938 5.05 7.5 1.05 0.28 26.663 31.089 35.418 39.651 43.791 405 10.009 9.962 34.797 4.88 8.9 1.35 5.4 0.22 26.800 31.258 35.616 39.877 44.044 503 8.345 8.292 34.614 1.70 7.4 12.3 0.35 26.927 31.422 35.818 40.115 44.317 602 6.866 6.809 34.499 4.77 17.8 2.02 10.7 0.24 27.051 31.581 36.011 40.342 44.576 596.8 702 5.398 5.339 34.377 27.142 31.709 36.175 40.540 44.808 746 4.927 4.867 34.347 27,173 31,753 36,230 40,607 44,885 738.7 797 4.505 4.443 34.343 5.05 26.8 2.38 16.1 1.06 27,217 31.807 36.295 40.682 44.971 789.8 848 4.152 4.088 34.338 27.251 31.850 36.347 40.743 45.040 839.6 898 4.004 3.937 34.351 27.277 31.880 36.381 40.780 45.080 889.1 947 3.858 3.788 34.370 27.307 31.914 36.419 40.821 45.125 937.1 996 3.656 3,583 34,381 4,64 36,0 2,66 21,6 0.56 27.336 31.949 36.458 40.366 45.174 985.9 1097 3.408 3.329 34.443 27,410 32,029 36,544 40,958 45,272 1085.8 1197 3.174 3.089 34.493 4.16 51.4 2.82 30.9 1.51 27.472 32.097 36.619 41.038 45.358 1184.9 1 297 3 046 2.954 34.547 27.528 32.156 36.681 41.103 45.425 1282.7

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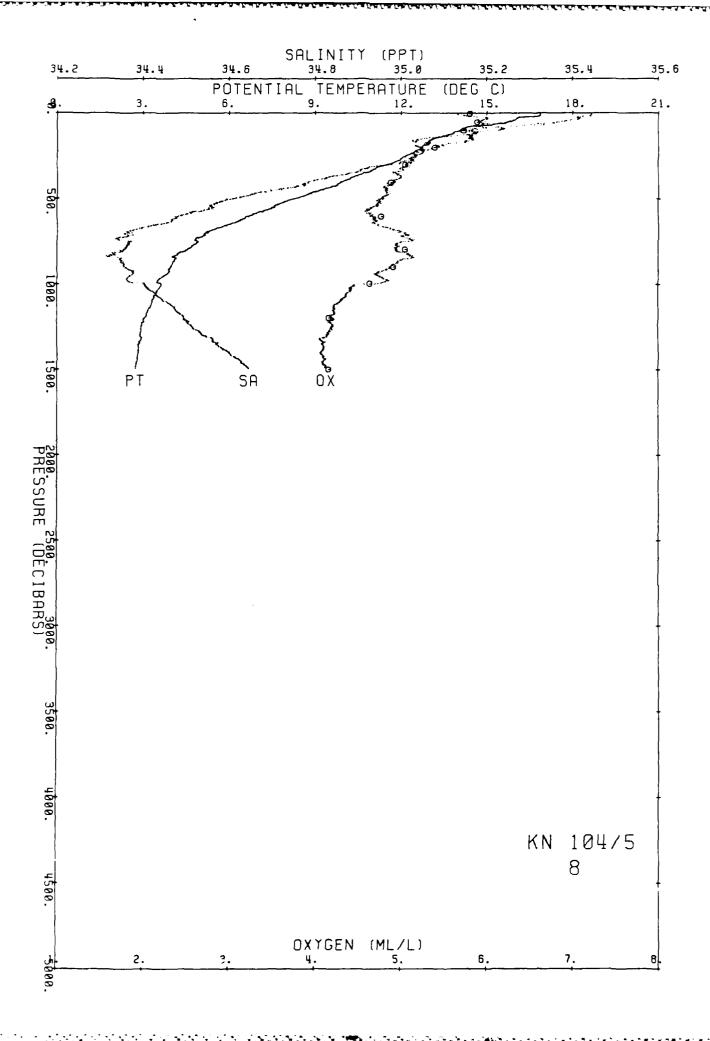
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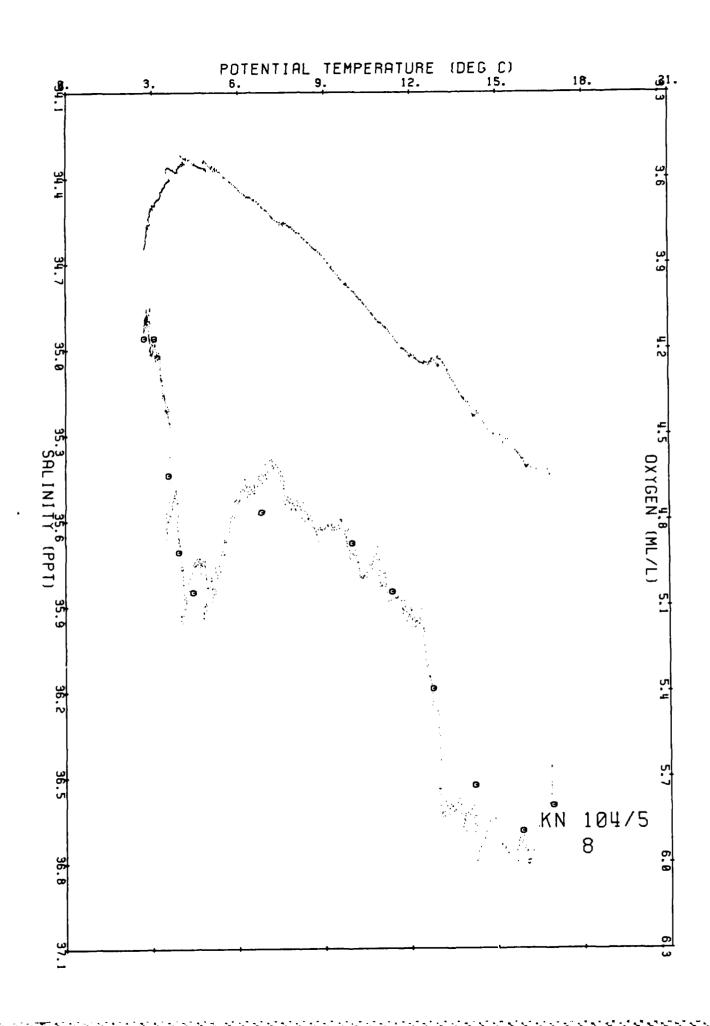
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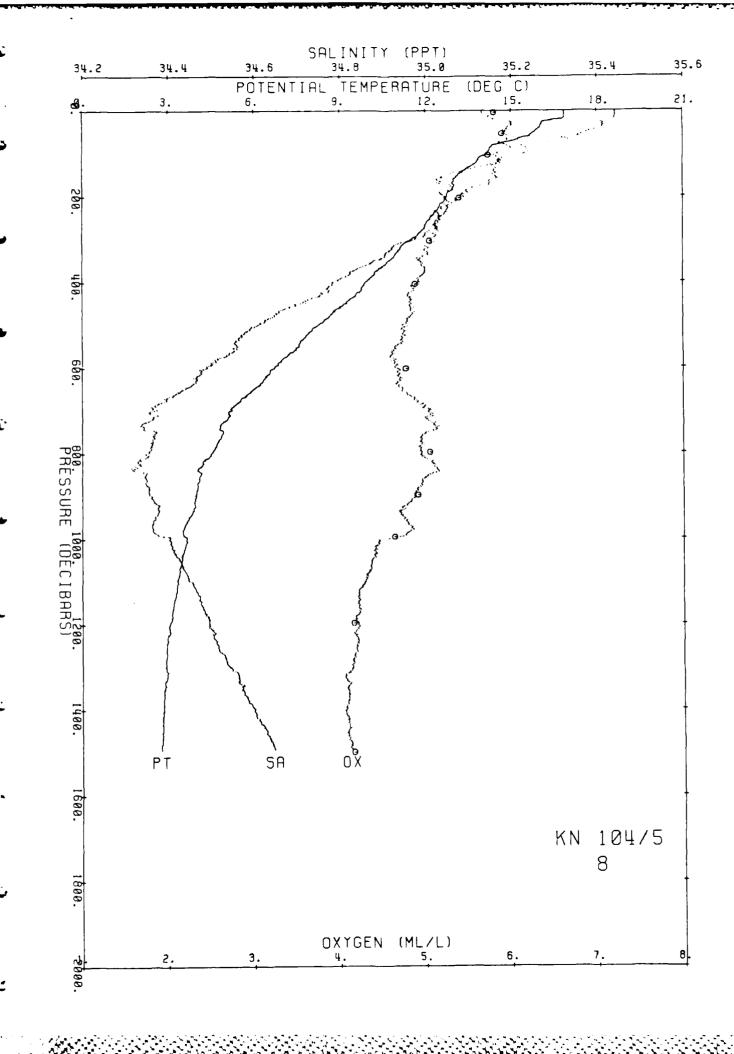
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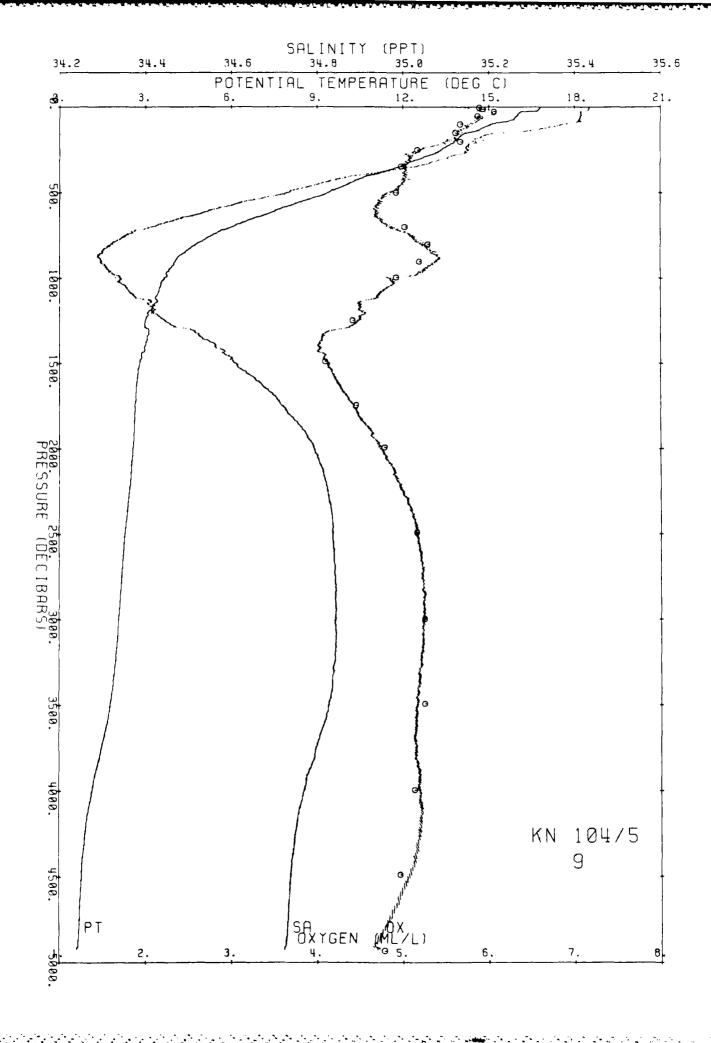


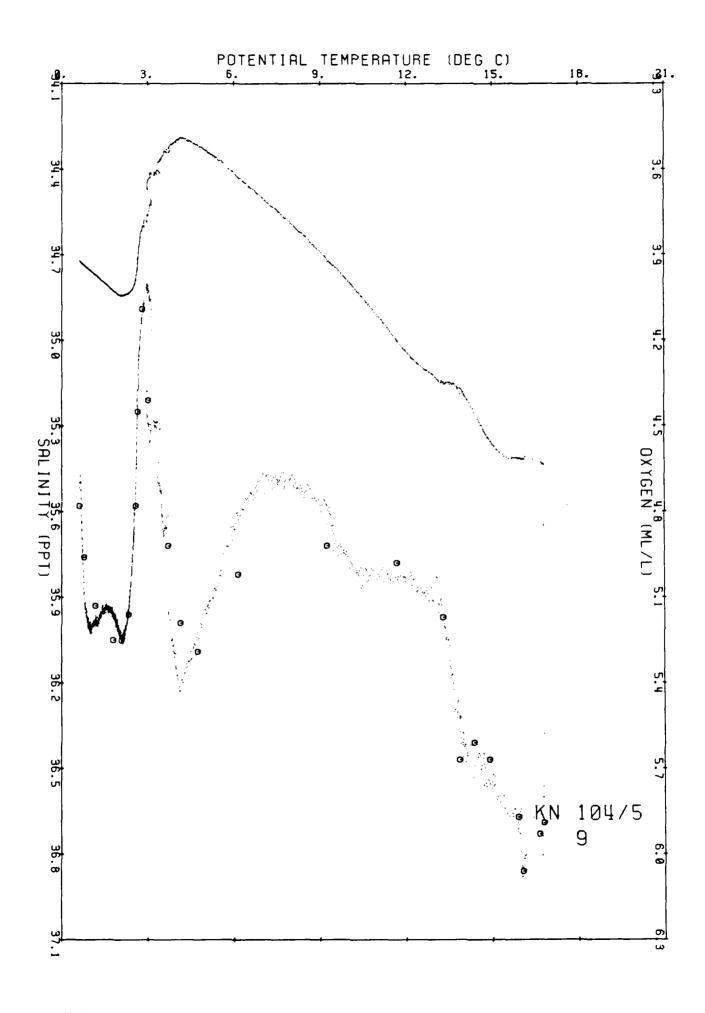
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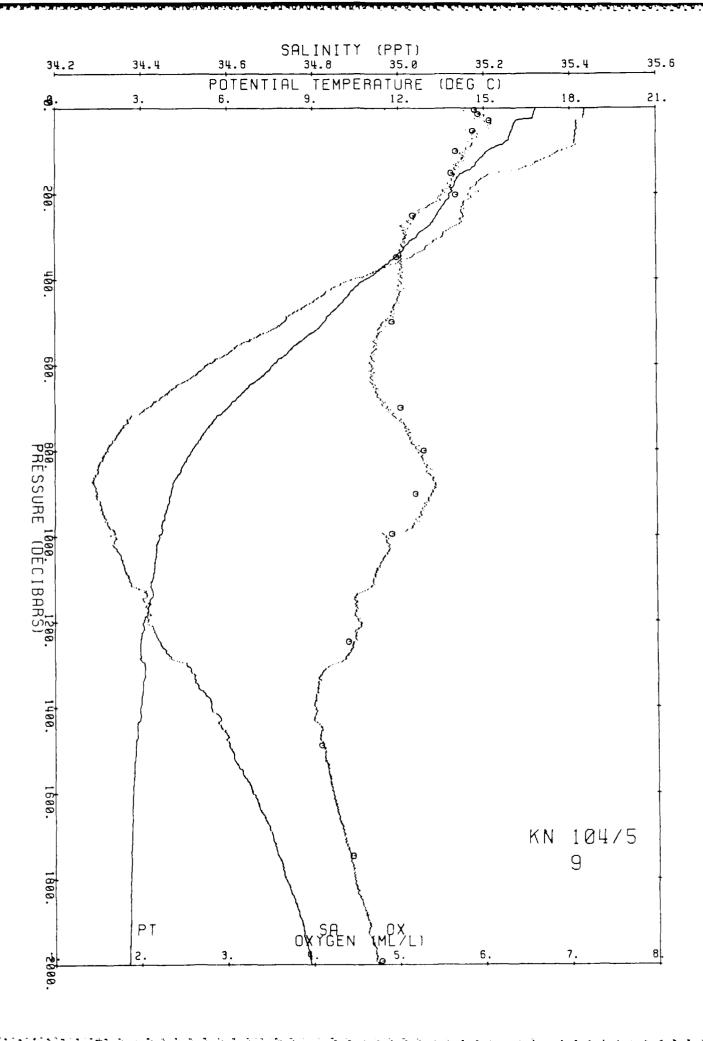




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Ship KN Cruise 1045 Station 10 Cast 1 DT .65 S 38.15 E 83/11/17 Start 36 14 at 1534 2.08 S 39.78 E End 36 14 a t 1721 TE SA OX 05 50 51 32 HZ DE 33 54 AN BV 0 19.919 19.919 35.524 5.7 110.0 25.184 29.484 33.630 37.716 41.713 277.3 0.00 0.0 10 19.875 19 873 35.525 5.6 108.7 25.197 29.468 33.645 37.731 41.729 276.4 . 03 2.03 10.0 20 19.731 19.728 35.530 5.6 108.Q 25.239 29.512 33.691 37.779 41.779 272.8 3.63 19.9 30 19:065 19:060 35:526 5.6 106.7 25.409 29.693 33.882 37.980 41.990 257.0 .08 29.9 40 18.173 18.166 35.543 5.1 95.4 25.648 29.946 34.149 38.261 42.283 234.6 .11 8.66 5.7 104.8 25.910 30.222 34.439 38.564 42.600 210.1 \$0 17.281 17.273 35.599 9.07 .13 6.0 109.4 26.045 30.367 34.594 38.728 42.773 197.5 60 16.709 16.699 35.597 . 15 6.53 59.8 6.0 109.5 26.097 30.423 34.654 38.792 42.841 192.9 70 16:478 16:467 35:594 4.06 .17 69.8 80 16.440 16.427 35.594 5.9 106.7 26.107 30.433 34.665 38.804 42.853 192.4 . 19 1.71 90 16.436 16.421 35.592 5.8 106.0 26.106 30.433 34.665 38.804 42.853 192.7 - . 26 89.7 5.8 105.4 26.109 30.436 34.668 38.807 42.856 192.8 100 16.423 16.407 35.591 . 91 99.7 5.8 105.3 26.111 30.439 34.670 38.810 42.859 193.3 120 16.423 16.404 35.593 . 26 . 60 119.6 140 16.407 16.385 35.590 5.8 105.7 26.113 30.441 34.673 38.813 42.862 193.8 . 30 . 58 160 16.382 16.357 35.582 5.8 105.5 26.114 30.442 34.675 38.815 42.865 194.5 159.4 . 34 . 28 5.6 101.1 26.149 30.482 34.721 38.856 42.921 191.8 180 16.079 16.050 35.535 2.37 . 38 2 26 200 15.855 15.824 35.509 5.5 98.5 25.180 30.518 34.761 38.910 42.969 189.3 .42 199.2 99.4 26.200 30.541 34.786 38.938 42.999 188.1 1.76 220 15.699 15.665 35.487 5.6 . 46 219.1 98.5 26.229 30.574 34.824 38.980 43.045 186.0 2.17 240 15.464 15.427 35.455 5.5 239 0 . 49 260 15.237 15.197 35.423 98.6 26.255 30.605 34.859 39.019 43.089 184.0 53 5.6 2.08 258.9 280 15.035 14.992 35.391 97.1 25.276 30.630 34.887 39.051 43.124 182.6 1.84 5.5 . 57 278.8 300 14.774 14.729 35.351 5.4 95.4 26.303 30.662 34.924 39.093 43.171 180.5 2.11 298.7 320 14.527 14.480 35.324 5.3 92.5 26.336 30.699 34.966 39.140 43.222 177.9 2.33 318.6 . 64 340 14.239 14.189 35.291 90.7 26.373 30.742 35.014 39.193 43.280 174.9 5.2 . 68 2.46 338.5 360 14.054 14.002 35.296 86.6 26.416 30.789 35.065 39.246 43.337 171.2 5.0 .71 2.65 358.4 87.9 26.456 30.838 35.124 39.316 43.416 167.8 380 13.541 13.487 35.208 5.1 2.60 89.8 26.494 30.885 35.180 39.380 43.488 164.4 400 13.105 13.049 35.142 5.3 398.2 450 12.430 12.369 35.073 86.8 26.575 30.981 35.289 39.501 43.622 157.6 5.2 447.9 500 11.797 11.732 35.013 83.6 26.651 31.069 35.390 39.615 43.748 151.2 5.1 497.6 80.8 26.709 31.136 35.465 39.699 43.839 146.6 1.01 550 11.380 11.310 34.986 5.0 1.98 600 10.804 10.730 34.921 4.9 79.4 26.763 31.203 35.545 39.790 43.941 142.0 1.08 650 10:051 9:974 34:826 76.1 26.821 31.278 35.635 39.896 44.063 136.7 1.15 2.07 8.940 34.693 4.7 73.1 26.888 31.368 35.749 40.032 44.220 130.0 1.22 700 9.018 70.3 26.970 31.471 35.871 40.174 44.381 121.8 1.28 9.128 8.050 34.622 4.6 67.9 27.049 31.576 36.002 40.330 44.561 113.4 1.34 6.945 34.520 800 7.022 4.6 4.920 34.320 73.1 27.145 31.724 36.200 40.576 44.853 101.5 1.45 4.994 5.2 2.09 4.087 34.285 74.7 27.209 31.809 36.306 40.702 44.999 1000 4.164 5.4 94.7 1.54 1.62 3.755 34.321 68.1 27.271 31.880 36.385 40.789 45.094 3.837 5.0 89.0 1.64 1.49 1092.7 63.3 27.343 31.960 36.474 40.887 45.199 3.408 34.368 1200 3.496 4.7 82.2 1.72 1.59 1191.7 1300 3.200 3.107 34.424 4.4 59.2 27.416 32.041 36.562 40.982 45.301 75.2 1.80 1.60 1290.6 1400 3.039 2.939 34.498 4.3 57.1 27.490 32.119 36.644 41.068 45.391 68.5 1.87 1.57 1389.5 54.3 27.537 32.166 36.691 41.115 45.438 3.030 2.923 34.555 PR TE PT SA 02 SI 20 NJ N2 NH4 50 51 52 33 5 20.378 20.377 35.542 5.42 0.19 2.2 0.01 0.20 25.076 29.339 33.508 37.587 41.578 3.6 4.8 0.01 0.20 25,196 29,467 33,643 37,730 41,728 15 19.880 19.877 35.525 3.8 0.17 2.3 14.4 29 19.456 19.451 35.528 4.1 0.18 2.5 0.03 0.20 25.310 29.587 33.770 37.863 41.867 28.8 0.27 25.978 30.295 34.517 38.646 42.686 52 17.011 17.002 35.604 5.92 0.02 3.7 0.18 2.2 103 16.428 16.411 35.595 5.83 4.7 0.23 2.8 0.15 0.42 26.111 30.438 34.670 38.809 42.858 153 16.398 16.373 35.588 5.69 0.26 0.36 26.115 30.442 34.675 38.814 42.864 5.2 3.1 0.25 198 15.834 15.803 35.504 5.43 5.4 0.37 3.2 0.02 0.20 25.181 30.520 34.762 38.912 42.971 196.8 26.312 30.673 34.937 39.108 43.188 299 14.673 14.628 35.335 0.48 2.6 4.3 0.02 296 2 400 13.098 13.042 35.151 5.30 0.66 3.9 26.502 30.894 35.189 39.388 43.496 6.4 396.8 26.576 30.980 35.287 39.499 43.619 450 12.471 12.410 35.084 0.79 5.9 3.6 445.7 0.90 26.655 31.075 35.396 39.622 43.755 500 11.764 11.699 35.011 5.14 7.0 4.2 495.3 549 11.323 11.253 34.983 1.00 16.8 26.717 31.145 35.476 39.710 43.852 9.3 544.2 600 10.713 10.639 34.908 9.7 1.08 18.3 0.68 26.769 31.211 35.555 39.802 43.955 594.1 700 8.976 8.898 34.691 4.86 12.8 1.40 21.8 26.893 31.374 35.756 40.039 44.228 693.2 7.308 7.229 34.553 1.74 26.8 27.035 31.555 35.975 40.296 44.520 799 19.3 791.8 27.136 31.709 36.181 40.552 44.824 5.114 34.336 5.24 19.2 1.96 30.1 899 5.189 890.4 949 4.551 34.297 2.02 30.5 27.168 31.757 36.242 40.627 44.913 4.627 21.5 939.3 0.65 27.198 31.798 36.294 40.690 44.986 996 4.119 34.276 5.42 2.10 28.9 4.196 22.5 986.5 3.802 34.276 2.16 30.3 27.231 31.838 36.343 40.746 45.050 1036.4 1047 3.880 25.1 3.797 34.318 2.23 29.5 27.264 31.872 36.376 40.780 45.083 1086.0 1097 3.880 28.3 3.398 34.367 4.75 38.2 2.41 33.6 0.70 27.343 31.960 36.475 40.887 45.200 1186.6 1199 3.486

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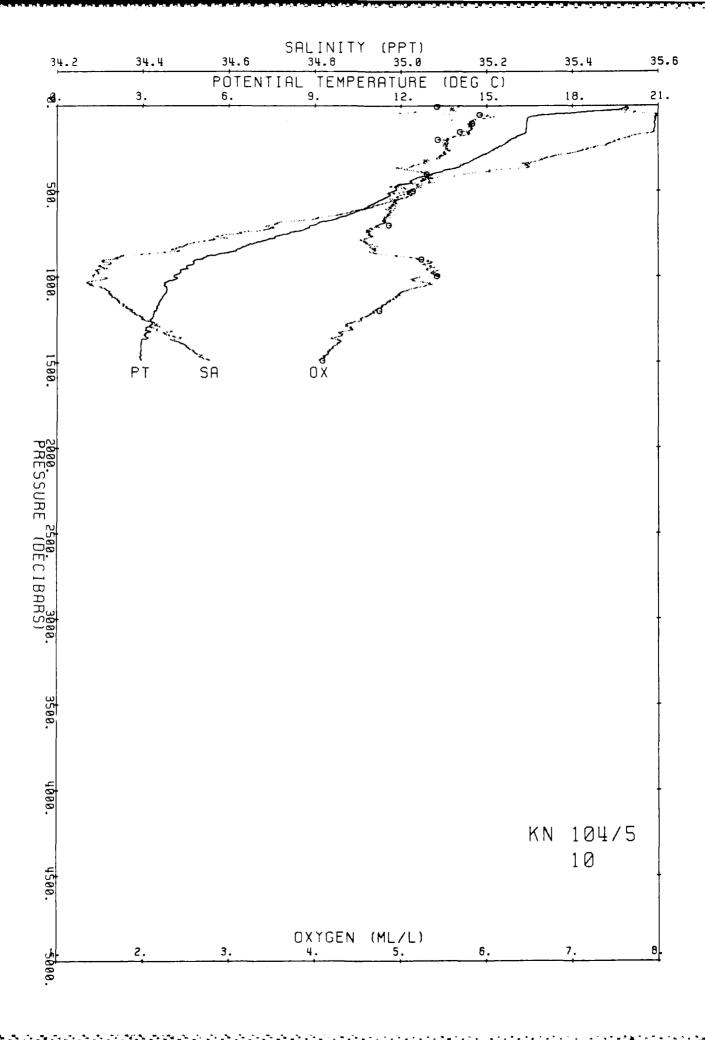
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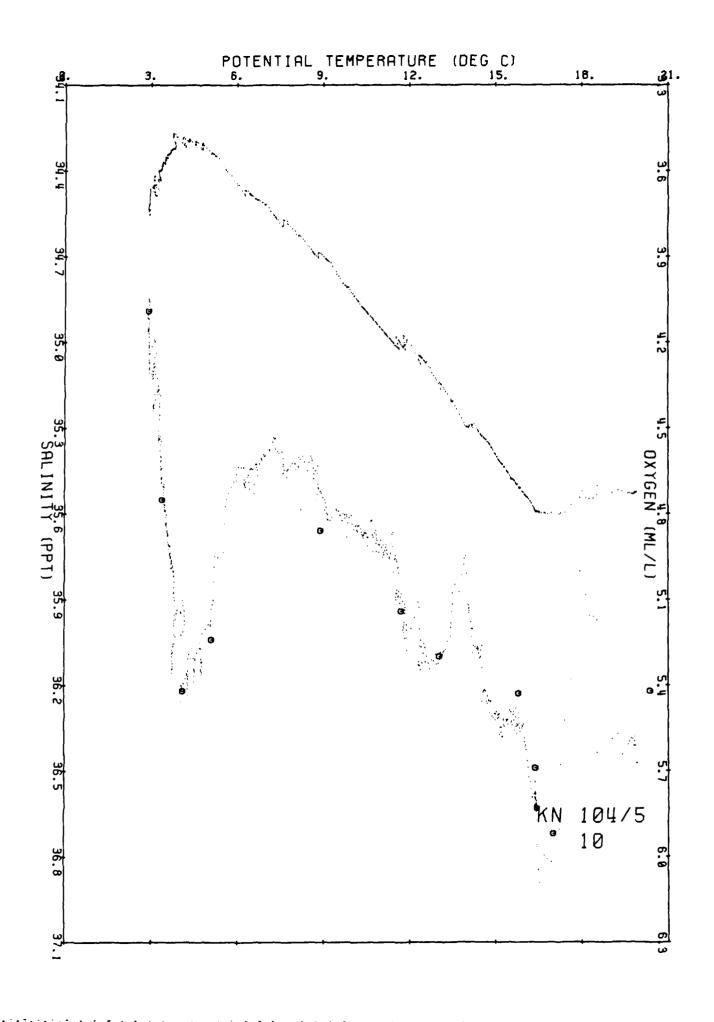
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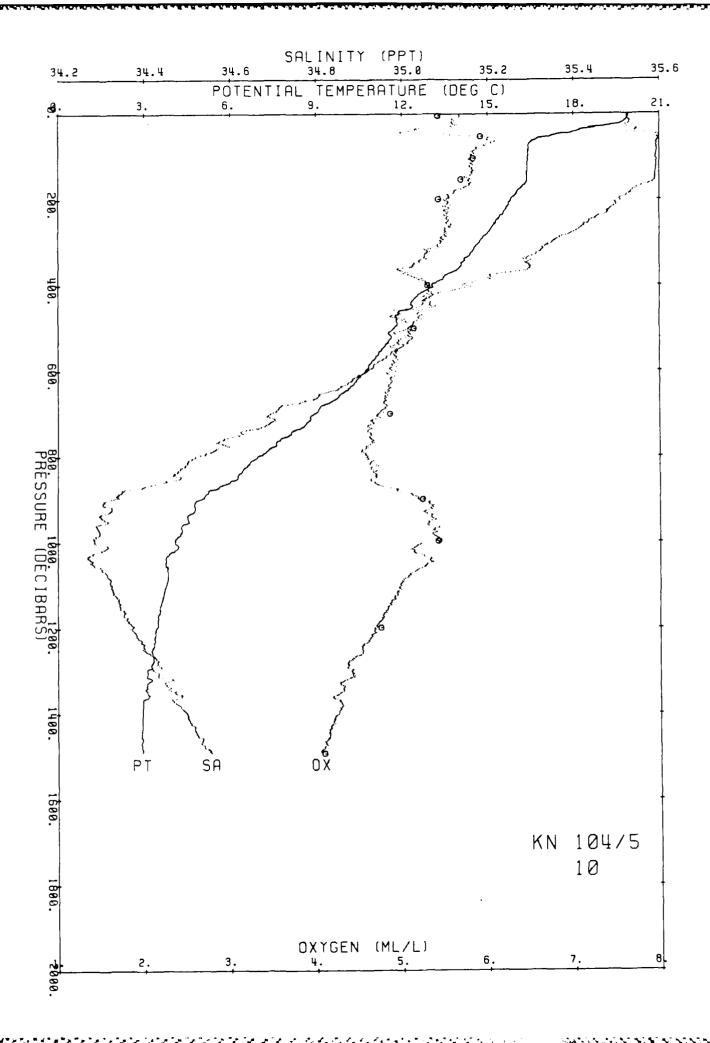
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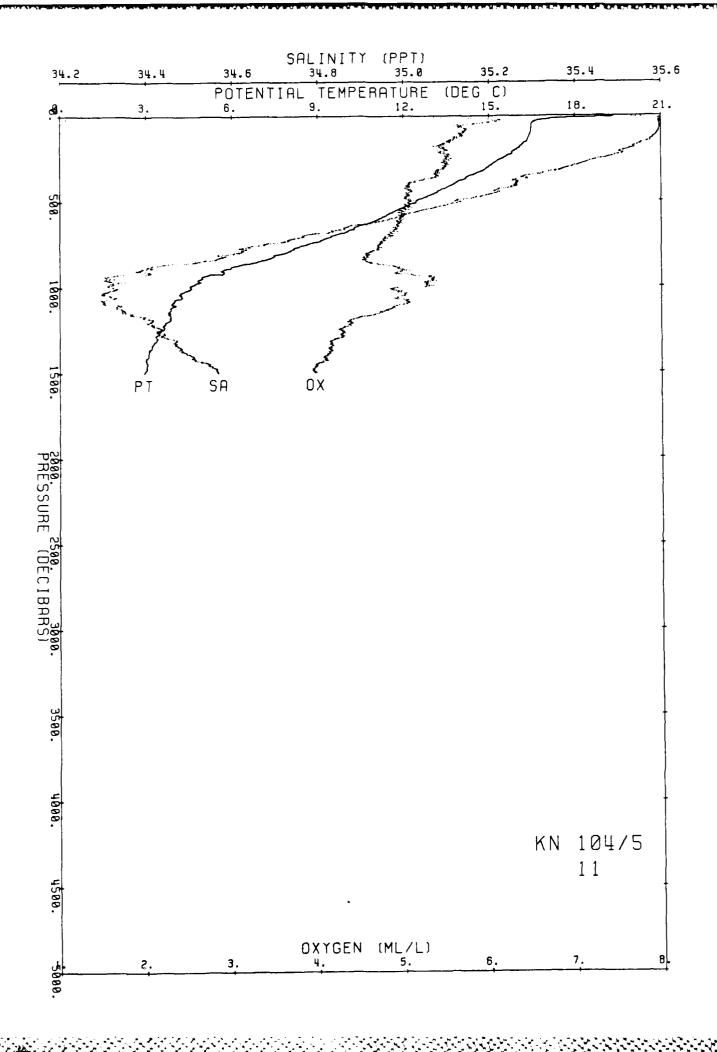


Ship KN Cruise 1045 Station 11 Cast 1 DT Start 3 6 .10 S 15 27.70 E 83/11/17 at 2155 59.49 S End 35 15 28.41 E a t 2308 PR TE PT SA OX OS SO S1 **\$2** S 3 54 AN ΗZ вv DE 0 19.342 19.342 35.533 5.0 95 2 25.342 29 621 33.806 37.899 41.905 262.3 0 00 0.00 0 0 5.4 103.0 25.551 29 840 34.036 38 139 42.155 242.8 10 18.662 18 660 35.578 20 17.123 17.120 35.613 6.0 110.3 25.957 30.272 34.492 38.619 42 657 204.5 30 16 660 16.655 35.596 6.1 110 7 26.055 30.378 34.605 38.740 42.786 195.5 40 16.523 16.517 35.597 6 0 109 2 26.088 30.413 34.643 38 780 42.828 192.7 50 16.493 16 485 35.597 5.8 104.6 26.095 30.421 34 651 38 789 42.837 192.4 60 16.487 16 477 35,597 5.6 102.7 26.097 30.423 34.654 38 792 42.840 192.6 70 16.487 16 476 35.597 5.7 103.3 26.098 30 423 34.654 38.792 42.840 192.9 80 16 483 16 470 35 596 5 7 104 3 26.098 30.424 34.655 38.793 42.841 193.2 79 . 16 42 90 16 479 16 464 35 596 5.7 103.4 26.099 30.426 34.656 38.795 42.843 193.4 . 18 89 7 100 16 460 16 444 35 591 5.7 103.4 26.100 30.427 34.658 38.796 42.845 193.7 . 20 5.3 99 6 5 7 103 1 26 107 30 434 34 666 38.805 42.855 193.8 5.6 100.7 26.111 30.439 34 672 38.812 42.863 194.0 . 24 120 16 413 16 394 35 584 1.01 119 6 140 16.369 16.346 35.575 . 28 82 139 5.5 98.7 26.126 30.457 34.693 38.835 42.888 193.2 159 4 160 16.232 16.206 35.553 32 1.58 180 16 102 16 074 35 536 5 4 97 7 26 144 30 477 34 715 38 860 42 915 192 2 . 36 1 68 179 200 15.948 15 916 35.516 5.5 98.6 26.165 30.501 34 742 38.889 42.947 190.9 40 1 83 199.2 220 15 848 15 814 35 512 5 5 98.1 26 185 30 523 34.766 38.915 42.974 189.6 43 1.80 219 1 240 15 619 15 582 35 479 98 7 26 212 30.555 34.801 38.955 43.018 187.6 5 5 47 2.10 239 0 260 15 367 15 327 35 440 98.4 26.239 30 587 34.838 38 996 43.063 185.6 5.5 51 2 11 258 97 4 26 264 30 614 34 869 39 030 43 101 183 8 280 15.182 15 139 35.417 5 5 55 1.98 278.8 300 15 012 14 966 35 387 96.6 26 279 30 633 34.891 39.055 43.129 183.0 5 5 58 1 59 298 320 14.848 14 800 35.362 5.4 94.9 26 296 30 653 34.914 39 082 43 158 181 9 62 1 69 318 6 93.7 26.324 30.687 34.954 39 127 43.208 179.6 340 14.559 14.508 35.317 2.19 5.4 . 66 338 360 14.250 14 197 35.276 5 4 93.1 26 360 30.729 35.001 39 179 43 267 176 7 . 69 2.41 358 4 380 14.029 13.974 35.255 88 7 26 391 30 764 35 041 39 223 43 314 174 3 5.1 . 73 2.26 378 3 400 13.822 13.765 35.262 87.0 26.440 30.817 35.097 39 284 43.378 170.1 5.1 76 2.82 398 450 13.189 13.126 35.217 5.0 85.4 26 536 30.926 35.219 39.416 43 522 161.9 . 84 2.52 447 500 12.493 12.425 35.121 5.1 84.8 26.601 31.006 35.312 39.524 43.643 156 5 92 497 2.12 550 11 -47 11.775 35.045 5.0 82.1 26.668 31.085 35.405 39.629 43 760 151.0 1.00 2.14 547.3 600 11.230 11.154 34.969 5.0 81 3 26.724 31.155 35.487 39.724 43.867 146.2 1.07 2.00 596 77.9 26.789 31.237 35 587 39.840 44 000 140.3 1 15 650 10.417 10.339 34.865 4.9 2.18 646.6 700 9.586 9 505 34 766 4 8 75.8 26 853 31 320 35 688 39.959 44 135 134 1 1.21 2 19 696 8.735 750 8 653 34.677 72.7 26.921 31.407 35.794 40.084 44.277 127.5 1.28 800 7.902 7.820 34.606 4.5 68.8 26.992 31 498 35 904 40.211 44 423 120 3 1 34 2.32 900 5.723 5.644 34.377 5.0 71.6 27.105 31.665 36.123 40.481 44.742 106 9 1.46 1000 4.633 4.553 34.323 68.4 27.189 31.777 36.262 40.647 44.933 4.9 97.7 1.56 1100 3.986 3 902 34.311 69.0 27.248 31.853 36.355 40.755 45.057 5.0 91.5 1.65 1200 3.841 3.750 34.410 4.4 59.5 27.342 31.951 36.455 40.859 45.163 83.2 1.74 1300 3.510 3.414 34.465 4.2 57.2 27.419 32.036 36.549 40.961 45.272 75.9 1.82 1400 3.198 3.097 34 510 4.1 55.2 27.485 32.110 36.631 41.050 45.369 69.5 1.89 1.55 1389.5 1500 3.042 2 934 34 569 53.2 27.547 32.176 36.701 41.124 45.446 4 0 64.0 1.96 PR TE PT SA 02 SI PO N3 N 2 NH4 SO 51 S 2 **S**3 **S4** 1505 3 044 2.935 34 566

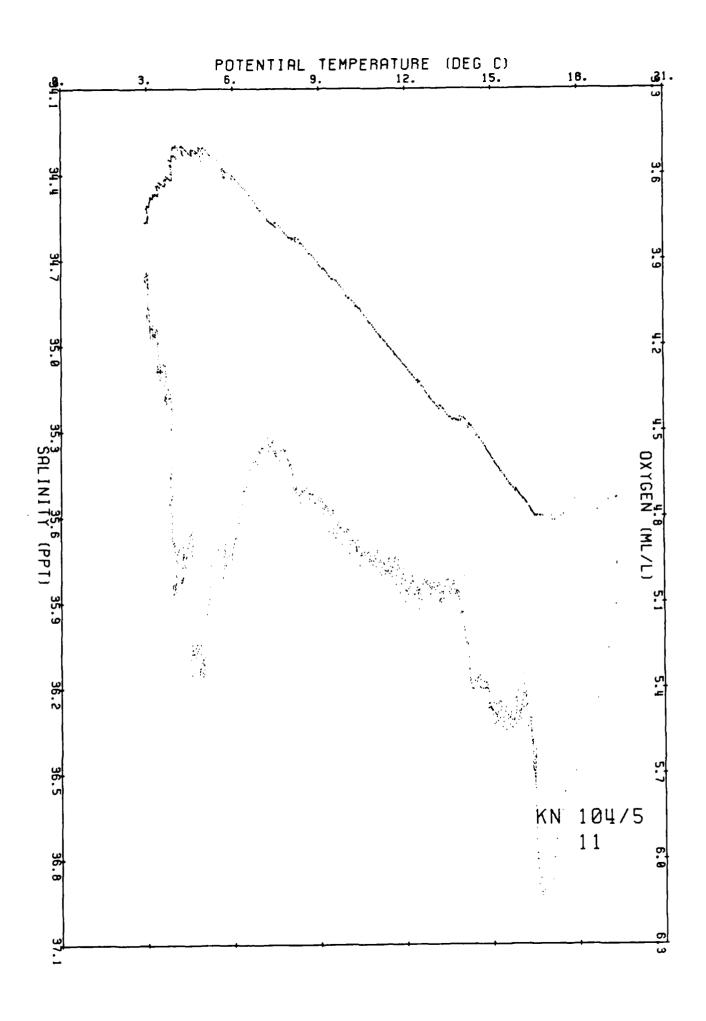
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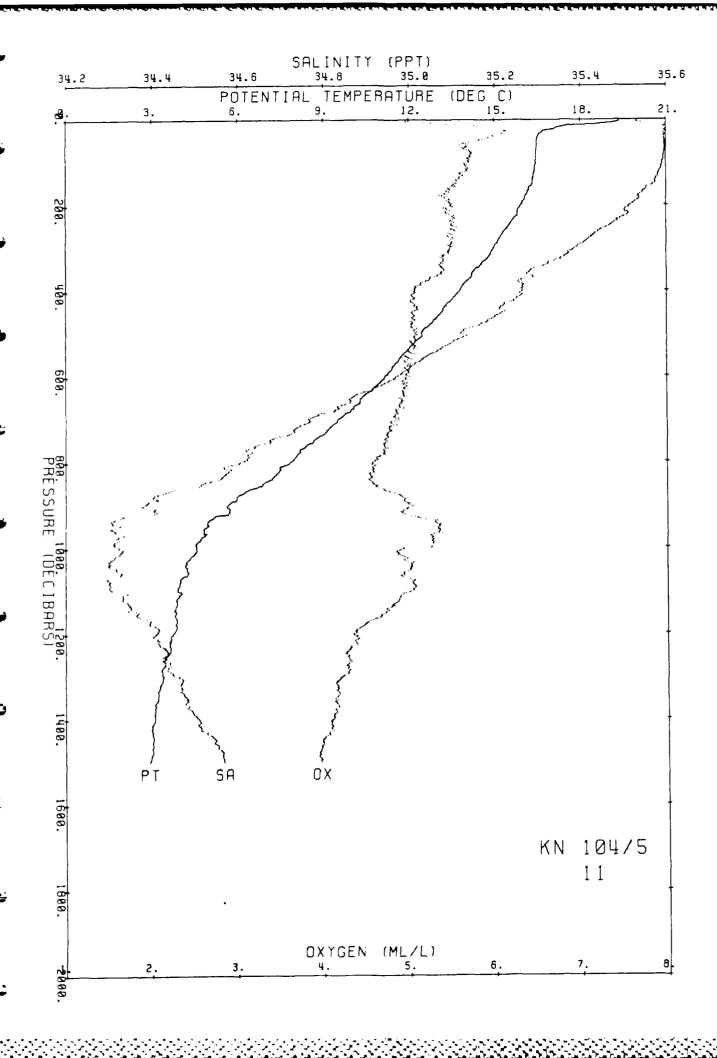
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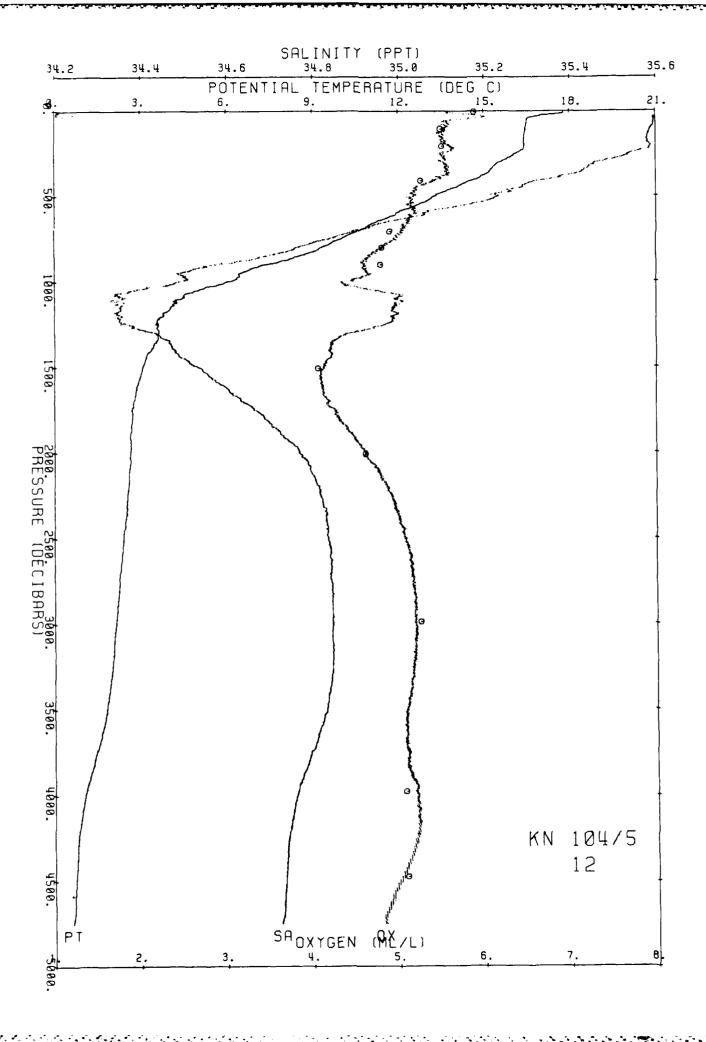


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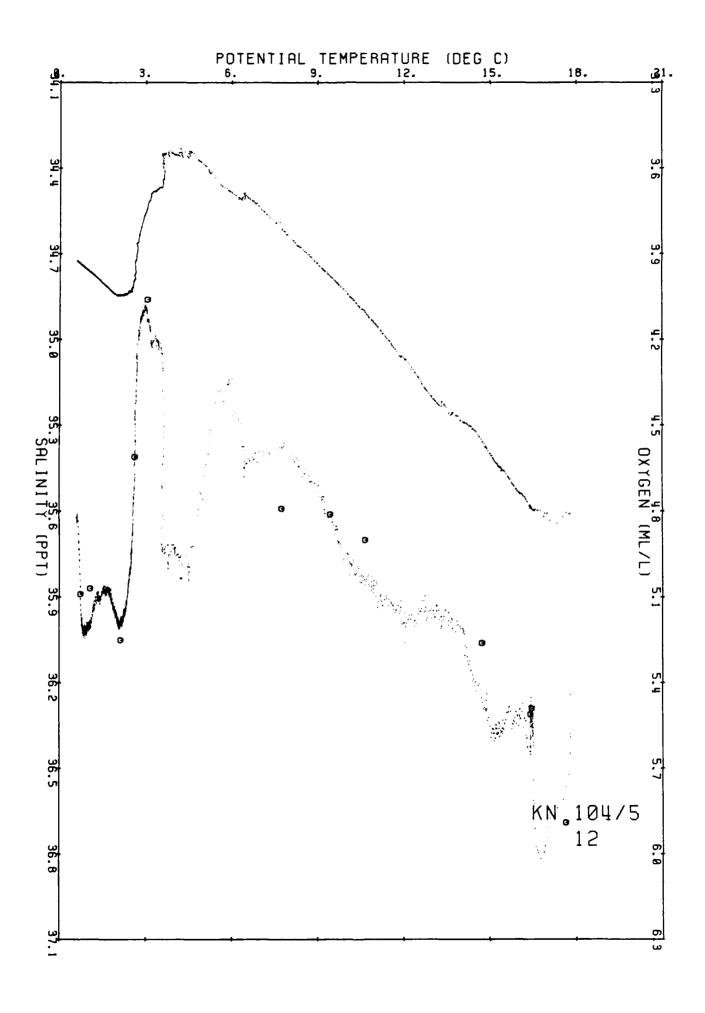


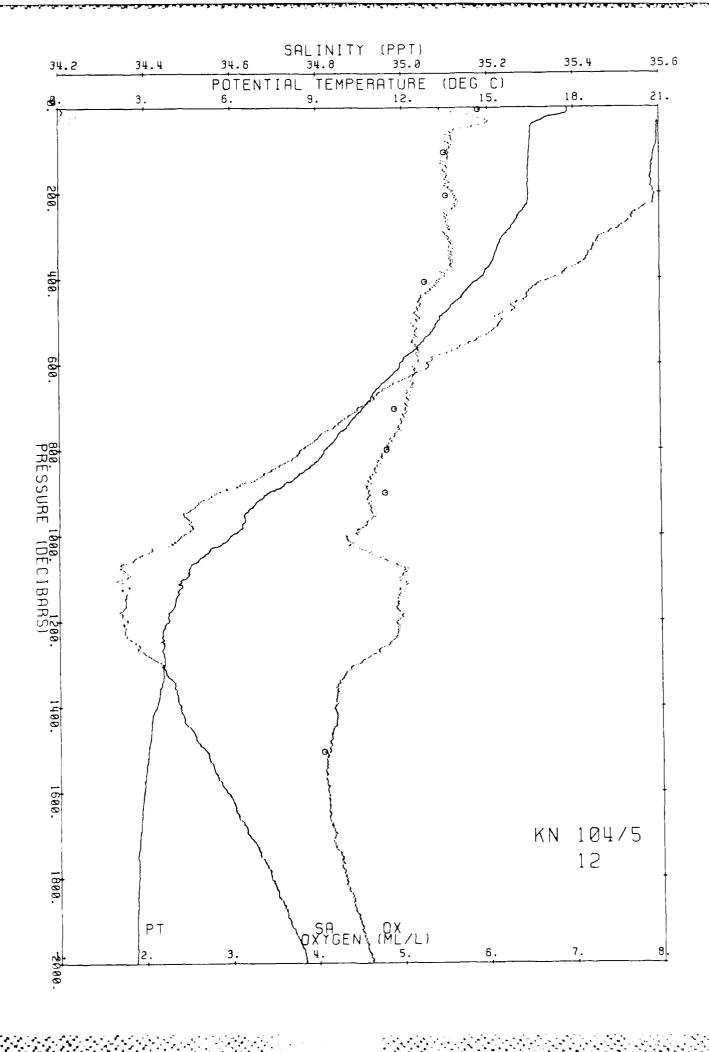


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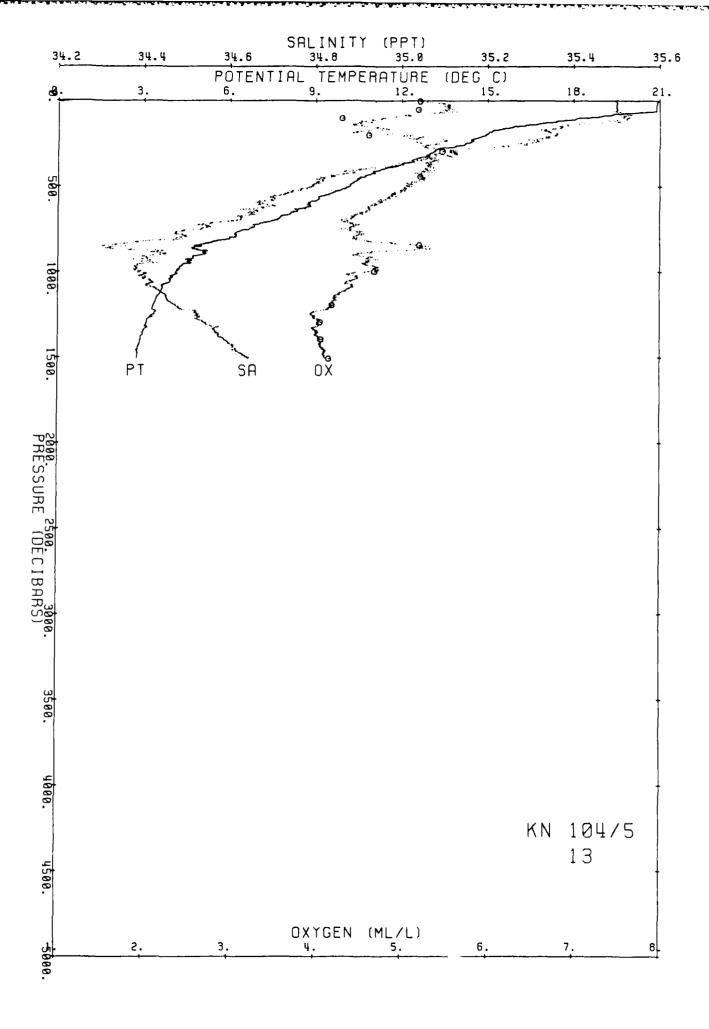


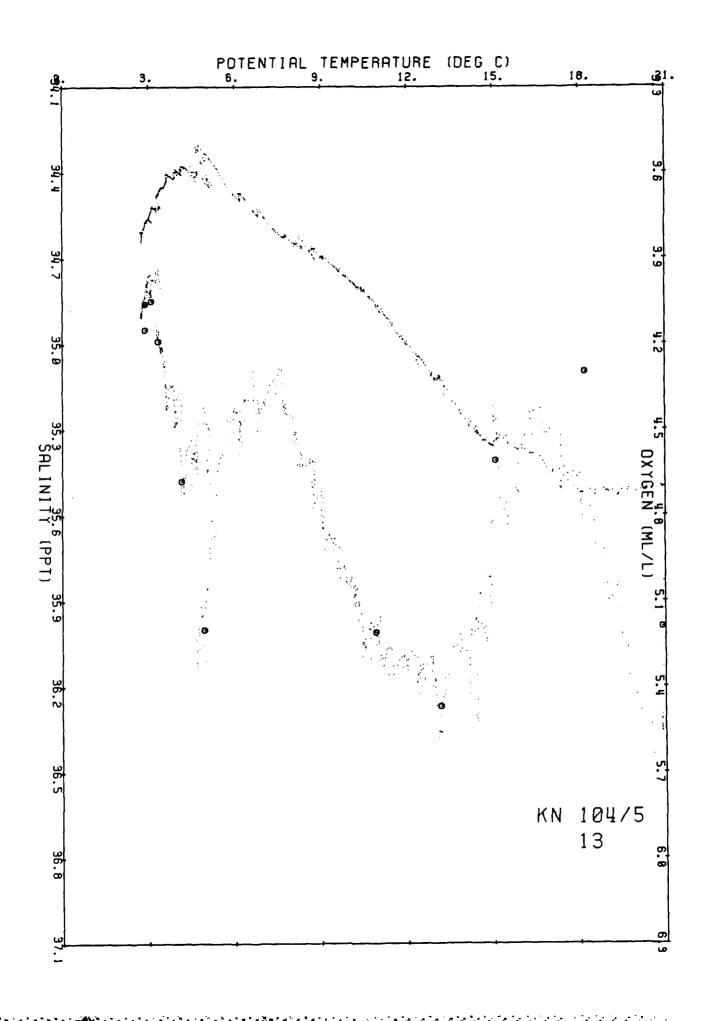
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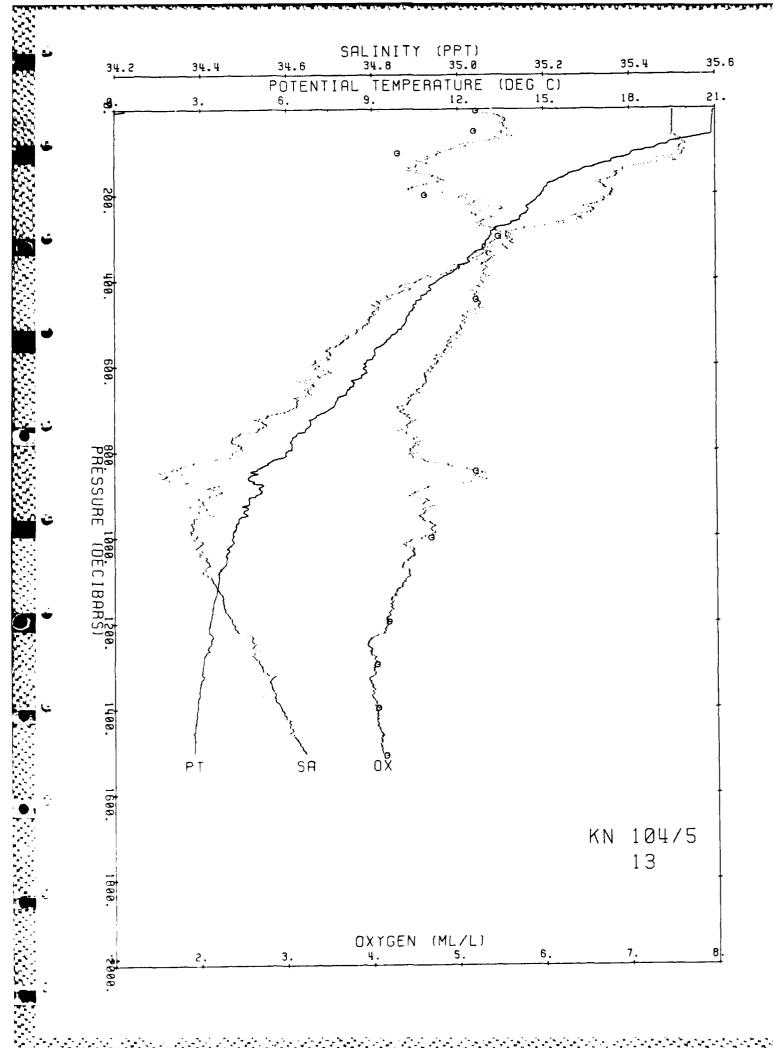




PR TE PT SA OX OS 30 5.1 S 2 33 S 4 AN ΗZ RV DE 0 21 347 21 347 35 533 3.5 69.4 24.806 29 055 33.210 37 275 41.253 313.2 0 00 0 00 0 0 10 20 923 20 921 35 501 5 3 105.3 24.898 29 153 33.315 37.386 41 370 304 9 0.3 20 20.911 20.907 35.501 5.5 108.6 24.902 29.157 33.319 37.390 41 374 304 9 06 30 20.894 20.889 35.500 5.5 109 4 24 906 29 162 33.324 37.395 41 380 304.9 09 40 20.891 20.884 35.499 5.5 109.5 24.907 29 162 33.324 37 396 41 381 305.3 12 50 20.892 20.882 35.500 5.5 109.3 24.908 29.163 33.326 37.397 41 382 305.6 . 60 . 15 60 20 886 20 875 35 500 5.6 109.7 24.910 29 166 33.328 37.400 41.384 305.8 . 18 80 70 20.163 20.150 35.514 5.5 106.8 25.115 29.382 33.555 37.637 41 631 286.6 8.04 . 21 80 19 401 19 386 35 526 5 1 98.5 25.325 29.603 33.788 37 881 41 886 267 0 8 13 90 18 995 18 979 35 517 5.0 96.1 25.423 29 708 33.898 37.998 42 009 258.0 27 5.56 100 18 408 18 391 35 514 4.8 90.0 25.570 29.864 34.064 38.172 42 192 244.4 . 29 6 80 99 120 17 400 17 380 35 485 4.5 83.6 25.796 30 108 34.324 38.448 42 483 223.4 74 5 99 119 140 16 440 16.417 35.386 4.4 80 5 25.949 30.277 34.510 38.650 42.701 209.4 . 38 4.93 139.6 160 15 754 15 729 35 36B 4 8 85 4 26 093 30 434 34.679 38 830 42 892 196 2 42 4 79 159 5 180 15.162 15.134 35.340 79.9 26.205 30 557 34.812 38.974 43 045 186.1 4.5 46 4.22 179 200 14.963 14.933 35.357 5.1 90.0 26.263 30.618 34.877 39.042 43.116 181.2 . 50 3.02 199 220 14 610 14.577 35 325 5.2 90.6 26 316 30 677 34.943 39.114 43.195 176 7 2 91 5.3 219 240 14.482 14.447 35.315 90.7 26.336 30.700 34.968 39.142 43.225 175.3 . 57 5.2 1 81 239 260 14.201 14 163 35.291 5.3 91.9 26.378 30 748 35.021 39.200 43 287 171 8 . 60 2.61 259 280 13 367 13.328 35.154 5.4 92.2 26.446 30.833 35.122 39.317 43.420 165.6 64 3.37 278 300 13.151 13.109 35.121 5.6 94.2 26.465 30.856 35.150 39.348 43.455 164.2 67 1 78 298.8 320 12.910 12.866 35.106 5.3 89.6 26 502 30 898 35.196 39.400 43 511 161.2 70 2.46 318 340 12.576 12.530 35.057 5.3 89.3 26.531 30 934 35.239 39.449 43.566 158 8 . 73 2.20 338 360 12.381 12.333 35.058 5.3 88.3 26.570 30 977 35.286 39.499 43 620 155.5 2 5 2 358 S . 80 380 11 909 11.860 34.983 5.3 87.4 26.603 31 020 35.338 39.561 43.691 152.6 400 11.367 11.316 34.910 5.3 85.8 26.648 31 076 35.406 39.840 43.780 148.4 . 83 450 10.594 10.539 34.814 5.3 84.1 26.714 31.158 35.504 39.754 43.910 142.8 80.8 26.759 31 212 35.566 39.824 43.987 139.3 500 10 221 10.162 34.788 5.1 97 550 9.439 9.377 34.723 4.9 76.2 26.841 31.311 35.682 39.956 44 135 131.9 1.04 600 8.847 8.782 34.677 4.7 72.0 26.900 31 384 35.768 40.055 44.246 126.5 1.10 650 8 271 8.203 34.649 4.6 70.3 26.968 31 465 35.862 40.161 44 365 120 4 1.16 700 7 599 7.528 34.609 4.3 64.4 27.036 31.549 35.962 40.276 44.493 113.8 1.22 2.22 750 6.744 6.673 34.535 4.3 63.0 27.097 31.631 36.064 40.397 44 634 107.5 1 28 800 6.060 5.989 34.475 4.4 63.9 27.140 31.690 36.139 40.489 44.741 103.0 1.33 900 5.050 4.975 34.436 4.4 62.5 27 231 31 807 36.281 40.655 44.930 93.7 1.43 1.88 894 5 1000 4.214 4.137 34.390 4.5 63.5 27.287 31 885 36.380 40.774 45.069 87.6 1 52 993 1100 3.724 3.642 34.430 4.4 59.7 27.369 31.980 36 487 40.894 45.200 79.6 1.60 1.73 1092.7 1 200 3 4 3 0 3 343 34 476 4 2 56.5 27.435 32.053 36.568 40.981 45.295 73.4 1.68 1.52 1191.6 1.300 3 185 3.092 34.542 4.0 54.2 27.511 32.136 36.657 41.076 45.395 66.4 1.75 1.62 1290.6 1400 2.985 2.886 34.589 4.0 54.0 27.568 32.197 36.723 41.147 45.471 61.2 1.81 1.40 1389.4 1.33 1488 1500 2 870 2.763 34.641 4.1 54.8 27.620 32 253 36.781 41.208 45.534 56.6 1.87 1505 2.876 2.769 34.643 4.1 54.8 27.621 32.254 36.782 41.209 45.535 56.6 1.88 .70 1493.2 PR TE PT SI SA 0.2 PO N3 N2 NH4 50 Sl S2 S3 DE 4 21.000 20.999 35.510 5.21 7.3 0.9 0.01 0.20 24.884 29.137 33.298 37.368 41.351 14 20.943 20.940 35.503 7.4 0.21 0.8 0.01 24.895 29.149 33.310 37 381 41.365 29 20.919 20.914 35.502 6.8 0.18 0.7 0.01 24.901 29.156 33.318 37 389 41.373 52 20.893 20.883 35.503 5.19 6.7 0.15 0.7 0.01 24.910 29.166 33.328 37.399 41.384 103 18.213 18.195 35.530 4.30 9.4 0.46 5.5 0.04 25.631 29.928 34.131 38.242 42.265 153 15.976 15.952 35.390 10.1 0.62 7.8 0.13 26.060 30.396 34.637 38.785 42.842 152 11.1 0.65 7.8 0.04 201 15.117 15.086 35.370 4.61 26,239 30.591 34.847 39.010 43.081 249 14.355 14.318 35 308 10.3 0.71 9.2 0.03 0.39 26.358 30.725 34.995 39.171 43.256 246 0.71 7.5 0.02 0.20 26.456 30.845 35.138 39.336 43.442 299 13.202 13.160 35.122 5.47 A 7 445 10 957 10.902 34.869 5.21 9.4 1.01 14.1 26.692 31.129 35.467 39.709 43.858 7.762 7.691 34.625 697 33.8 1.70 21.5 27.025 31.534 35.943 40.253 44.467 690 3 797 5.841 5.771 34.418 22.9 1.94 31.2 27.122 31.678 36.133 40.488 44.745 789 846 5.001 4 932 34 346 5 20 28.1 2 03 27 4 0.51 27.165 31.743 36.219 40.594 44.871 R38 1 4 8 2 6 907 4.752 34.410 24.9 2.21 35.6 0 34 27.236 31.818 36.298 40.677 44.957 1001 4.232 4.155 34.389 4.68 44.1 2.27 33.8 0.20 27.284 31.882 36 377 40.770 45.065 991 1 3.687 34.420 1097 3.769 48.0 27.357 31.966 36.473 40.878 45.183 1085 2.39 35.6 3.441 1196 3.354 34.472 60.1 37.0 27,431 32,049 36,563 40,976 45,290 1184.0 2.47 3.431 3.344 34.471 4.19 1197 27.431 32.049 36.564 40 977 45 291 1184 4 1297 53.8 2.46 37.4 3.098 34.550 4.05 3 191 27.517 32.141 36.662 41.081 45.400 1283.0 1297 3.190 3.097 34.540 27.509 32.134 36.654 41.073 45.392 1283.6 1397 2.990 2.891 34.585 0.60 27.564 32.194 36.719 41.143 45.467 1382.5 56.4 2.986 2.887 34.585 4.06 2.46 1398 27.564 32.194 36.720 41.144 45.468 1383.2 2.881 34 530 4.15 73.1 2.41 35.7 1509 2.990 0.30 27.521 32.151 36.678 41.102 45.426 1492 8 2.769 34.642 27.620 32.253 36.781 41.208 45.534 1490 4







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2.763

2.757

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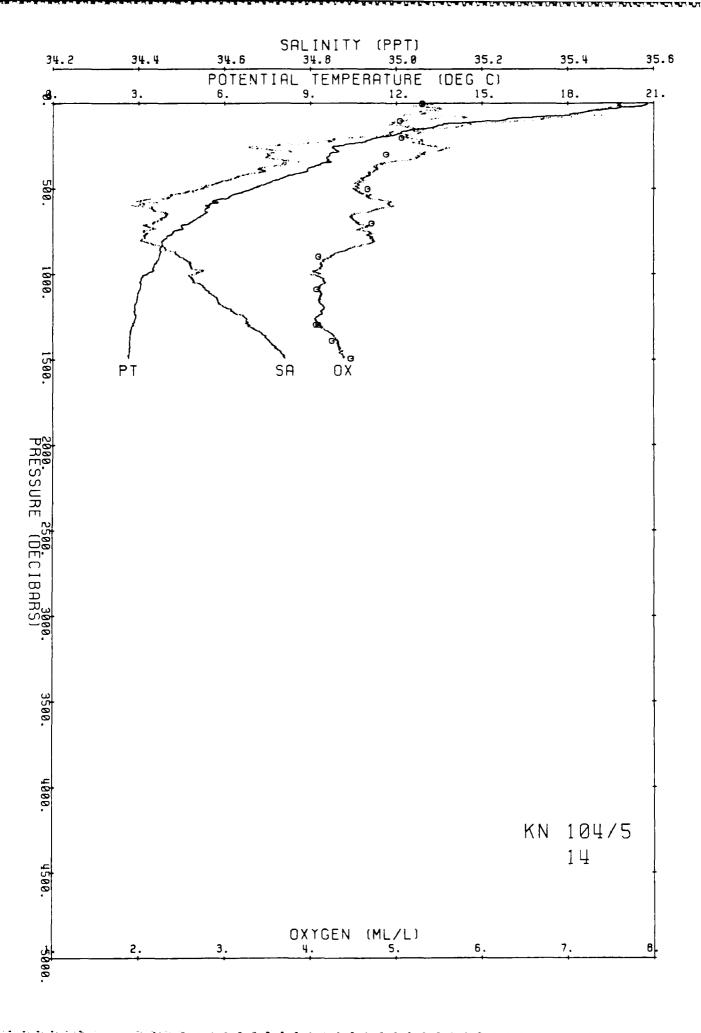
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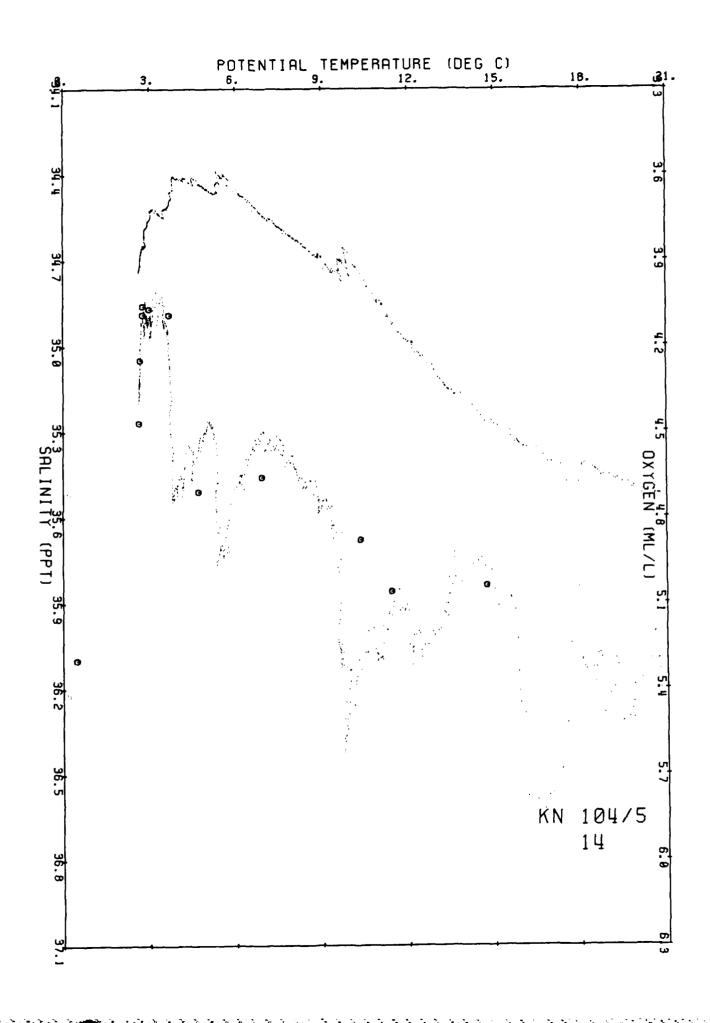
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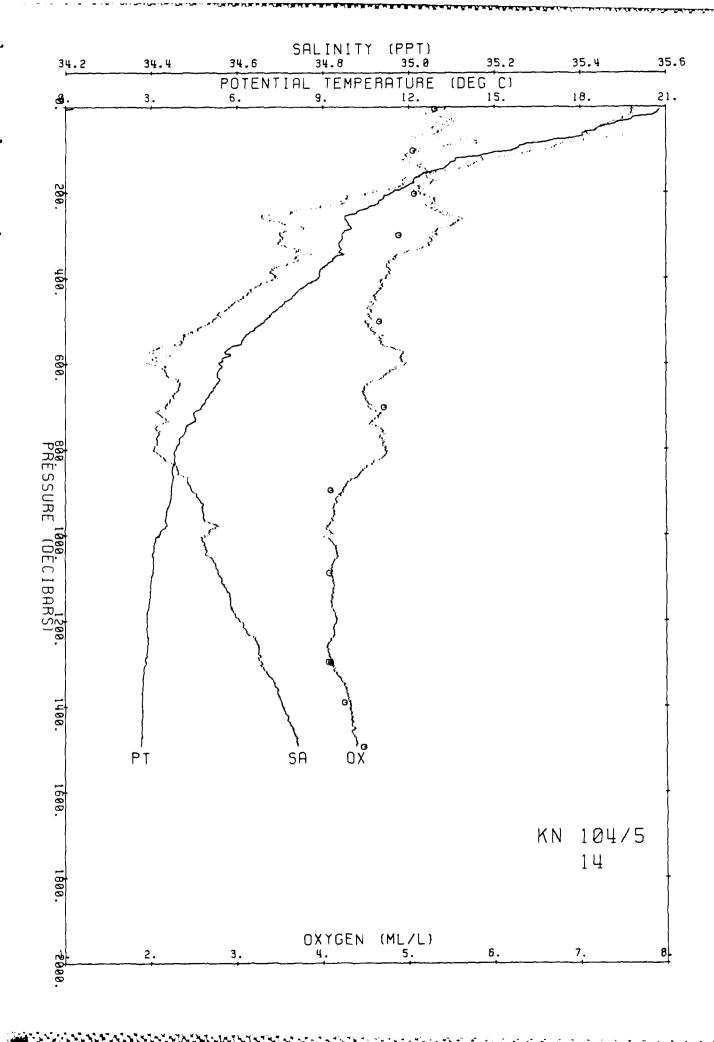
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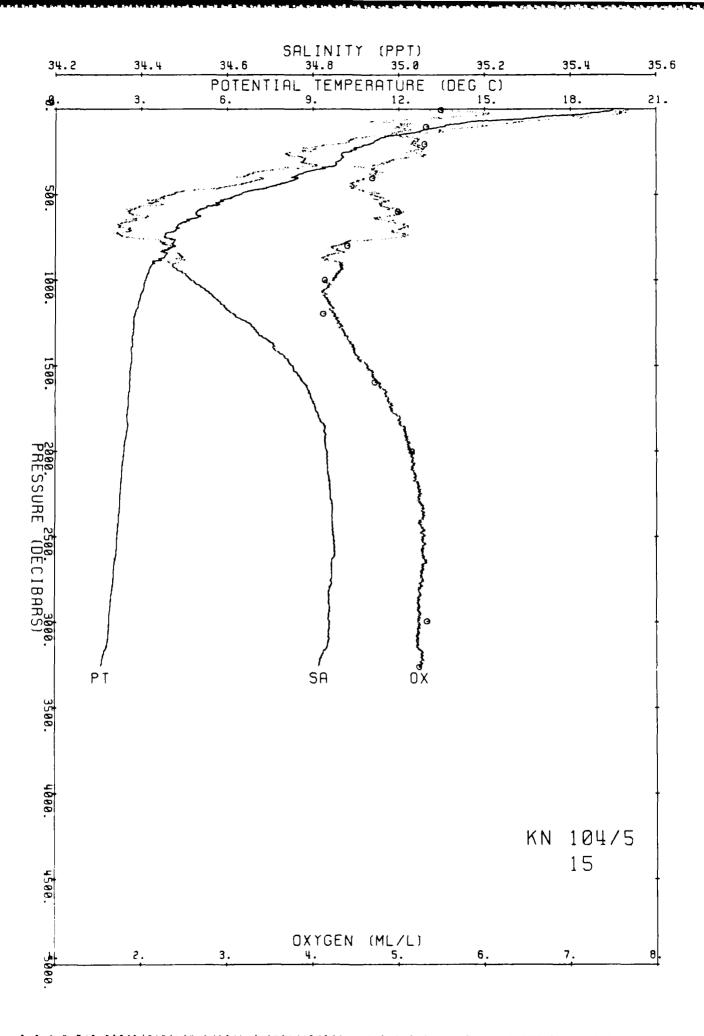
56.2 2.19 38.6

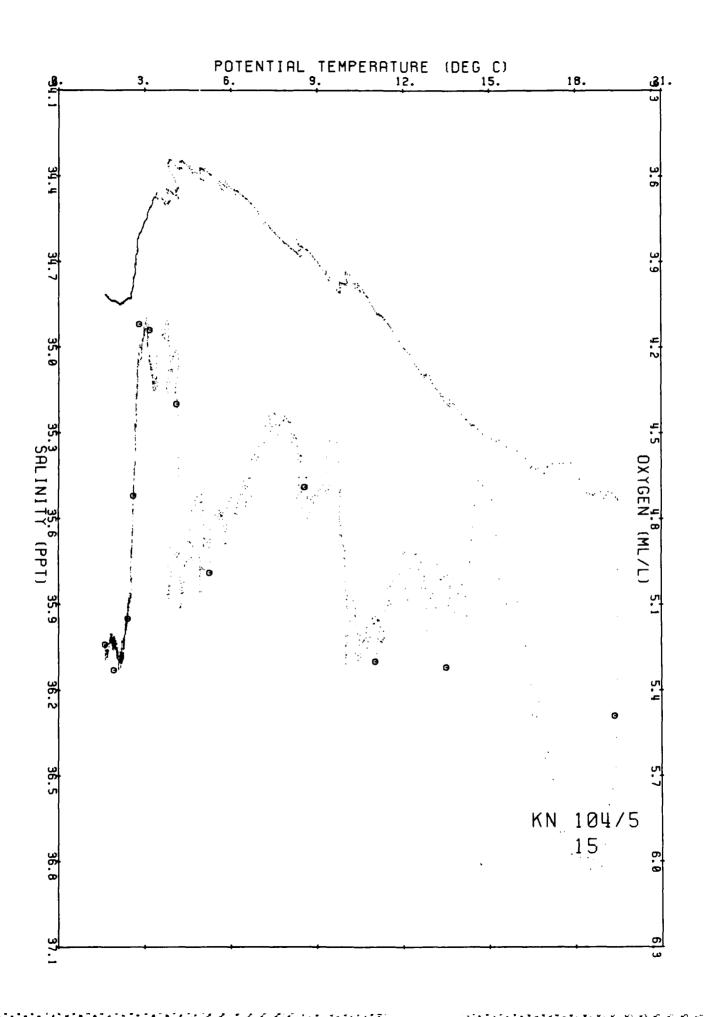


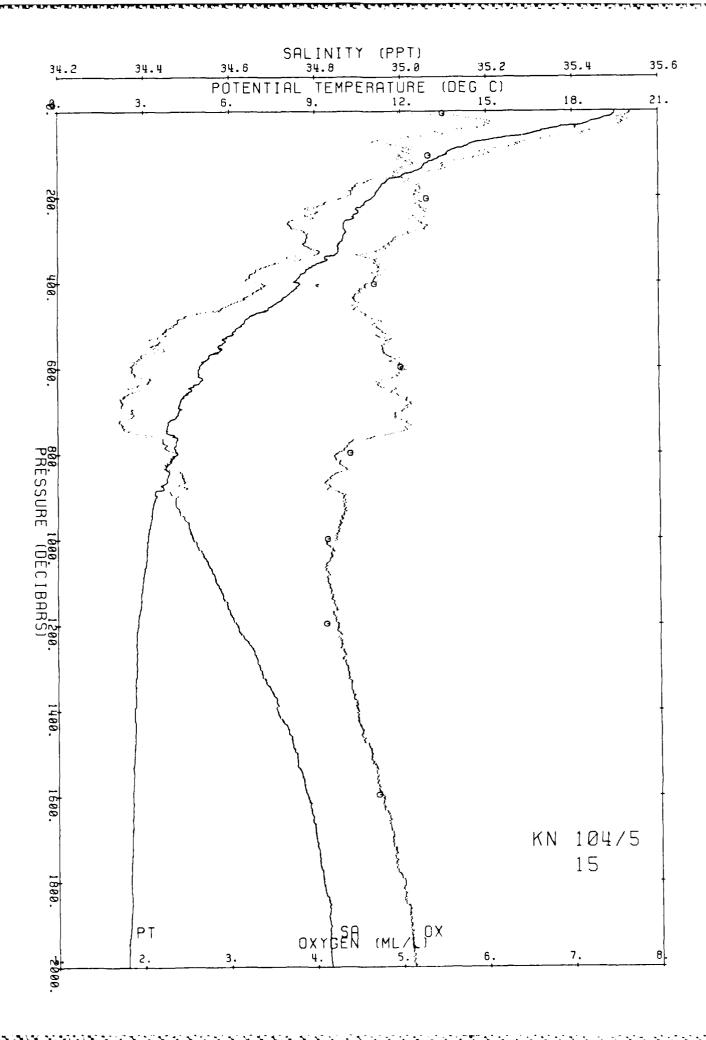




Ship KN Cruise 1045 Station 15 Cast 1 DT .14 E Start 35 59.94 S 18 at 2335 83/11/18 End 36 .30 S 18 2.88 E 228 a t PR SA OX os SO TE 51 **S 2** 23 **S4** AN HZ ΒV DE 0 19.477 19 477 35.535 5.0 95.8 25.308 29.585 33.768 37 860 41.863 265.4 0.00 0.00 10 19.419 19.418 35.525 5.6 107.0 25.316 29.594 33.778 37.871 41.875 265.1 .03 20 19.001 18.997 35.530 5.9 113.3 25.428 29.713 33.903 38.002 42.013 254 8 30 18.501 18.496 35.514 6.0 113.9 25.543 29.836 34 034 38.141 42.159 244.2 . 08 5.9 109.1 25.719 30.030 34.245 38.369 42.403 227.8 40 17.458 17.452 35.407 5.4 99.2 25.909 30.232 34.459 38.595 42.640 210.1 50 16 718 16.710 35.423 60 15.986 15.977 35.364 5.1 91.5 26.034 30.370 34.611 38 758 42.816 198.5 70 14.795 14.785 35.303 82.2 26.254 30.612 34.873 39.042 43.119 177.8 4.7 80 14 343 14 332 35 268 5.0 86.1 26.325 30.691 34.961 39.137 43.222 171.4 90 13.808 13 796 35.200 88.1 26.385 30.762 35.043 39.229 43.323 165.8 5.1 100 13.592 13.578 35.203 5 1 87.3 26.433 30.814 35.098 39.288 43.387 161.6 3.68 120 12.942 12 926 35.098 5 1 86.7 26.484 30.879 35.176 39.379 43.489 157.1 2.88 140 12.484 12.465 35.066 4.9 82.2 26.551 30.955 35.261 39.472 43.590 151.3 28 3.25 139.5 160 11.577 11.557 34.927 5 0 82.4 26.617 31.040 35.364 39.594 43.730 145.3 . 31 3.28 159.4 180 11.267 11 245 34.888 5.2 85.0 26.644 31.074 35.405 39.641 43.783 143.1 . 33 . 36 2.12 179.3 200 11.050 11.026 34.871 5.1 83.2 26.671 31.105 35.441 39.681 43.827 141.0 2.08 199.2 . 39 1.81 220 10.681 10.654 34.810 5 2 83.8 26.690 31.132 35 476 39.724 43.877 139.5 219.1 240 10.448 10 420 34.790 5.2 83.1 26.716 31.163 35.512 39.764 43.923 137.5 . 42 2.05 239.0 260 10 053 10 023 34 738 . 45 5.2 83.0 26.744 31.200 35.557 39.818 43.984 135.1 2 18 258 9 280 10.094 10.061 34.773 81.0 26.765 31.220 35.576 39.836 44.001 133.6 5 1 . 47 1.79 278 8 50 9.946 34 779 78.0 26.789 31.247 35.605 39.867 44.035 131.7 300 9.980 4.9 1.98 298.6 9.862 76.1 26.820 31.280 35.641 39.905 44.075 129.2 320 9.826 34.792 4.8 . 53 2 21 318 5 340 9.373 9.335 34.734 71.5 26.856 31.327 35.699 39.974 44.153 125.8 . 55 4.6 2 50 338.4 360 8.968 8.929 34.691 72.9 26.888 31.369 35.749 40.033 44.221 122.9 4.7 . 58 2.35 358.3 8.561 8.521 34.651 4.7 71.8 26.921 31.411 35.801 40.093 44.290 119.9 . 60 380 2.38 378.2 8.428 8.386 34.662 71.0 26.950 31.443 35.836 40.131 44.331 117.4 400 4.7 . 62 2 19 398.0 7.585 34.605 450 7.630 4.5 66.9 27.025 31.537 35.948 40.260 44.477 110.5 . 68 2.28 447.7 6.454 6.409 34.467 68.3 27.079 31.619 36.059 40.399 44.641 105.0 500 4.7 . 73 497.4 2.06 550 5.657 5.611 34.420 4.8 68.3 27.143 31.704 36.162 40.521 44.782 98.6 .79 2.16 547.0 600 5.007 4.959 34.375 70.1 27.185 31.762 36.237 40.611 44.887 94.4 .83 90.5 .88 87.0 .92 5.0 1.79 596.7 650 4.735 4.684 34.390 4.9 69.1 27.228 31.812 36.293 40.674 44.956 1.72 646.3 4.289 700 4.237 34.373 5.0 69.3 27.263 31.859 36.351 40.743 45.036 1.64 695.9 750 3.874 3.820 34.372 5.0 67.9 27.305 31.912 36.415 40.817 45.120 82.8 97 1.77 745.5 800 4.250 4.190 34.480 4.2 58.6 27.353 31.949 36.442 40 834 45.127 79.5 1.01 1.57 795.1 900 3.506 3.442 34.479 4.3 58.8 27.428 32.043 36.556 40.967 45.278 71.9 1.08 894.2 1.69 1000 3.231 3.162 34.517 4.2 57.2 27.485 32.108 36.627 41.044 45.362 66.7 1.15 1.41 993.3 2.977 34.568 1100 3.053 4.1 55.6 27.542 32.170 36.694 41.115 45.437 61 6 1 22 1.40 1092.3 2.879 2.796 34.617 1200 4.3 56.8 27.598 32.230 36.758 41.184 45.510 56.6 1.28 1 37 1191 2 2.839 2.749 34.669 58.1 27.644 32.277 36.805 41.232 45.559 1300 4.4 53.0 1.33 1.21 1290.1 59.8 27.683 32.317 36.848 41.277 45.605 1400 2.766 2.668 34.709 4.5 49.8 1.38 1.14 1389.0 1500 2.756 2 650 34.753 61.9 27.720 32.354 36.885 41.314 45.642 4.6 47.0 1.43 1.07 1487 8 1600 2.718 2.605 34.779 63.7 27.744 32.380 36.912 41.342 45.671 4.8 45.3 1.48 .90 1586 6 1700 2.692 2.570 34.798 4.9 64.9 27.763 32.399 36.932 41.362 45.692 44.1 1.52 .78 1695 3 1800 2.642 2.513 34.814 5.0 66.7 27.780 32.418 36.952 41.384 45.715 42.9 1.56 .79 1784.0 1900 2 640 2.502 34.829 5.1 67.5 27.793 32.432 36.966 41.397 45.729 42.4 1.61 .64 1882 6 2000 2.556 2.410 34.831 5.1 68.1 27.803 32.444 36.980 41.414 45.748 41.7 1.65 67 1981.2 2100 2.501 2.348 34.835 5.2 68.5 27.811 32.454 36.992 41.428 45.763 41.3 1.69 61 2079 7 2200 2.463 2.301 34.839 5.2 69.3 27.818 32.462 37.001 41.438 45.775 41.0 1.73 55 2178 2 2300 2.439 2.268 34.843 5.2 69.3 27.824 32.469 37.009 41.447 45.784 41.0 1.77 49 2276.6 2400 2.401 2.222 34.845 5.3 69.5 27.830 32.476 37.017 41.456 45.794 40.8 1.81 51 2375.0 2500 2.368 2.180 34.849 5 3 69.7 27.836 32.483 37.026 41.466 45.805 40.6 1.85 .54 2473 3 2600 2.342 2.145 34.852 5.3 69.7 27.842 32.490 37.033 41.474 45.814 40.5 1.89 49 2571 6 2700 2.261 2.056 34.844 5.3 69.2 27.842 32.493 37.039 41.482 45.824 40.4 1.94 48 2669 9 2800 2.217 2.004 34.840 5.2 68.8 27.843 32.495 37.043 41.487 45.831 40.6 1.98 40 2768 1 68.9 27.847 32.501 37.050 41.496 45.842 2900 2 166 1 944 34 839 5.2 40.4 2.02 52 2866 3 3000 1.901 34.839 68.6 27.851 32.506 37.056 41.503 45.849 46 2964.4 2 133 5.2 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0.20 26.946 31.435 35.824 40.115 44 311 400 502 6.608 6.562 34.483 19.1 1.86 33.8 0.20 27.071 31.608 36.044 40.380 44 619 498 0 5.295 5.246 34.391 4.99 2.03 31.8 598 0.20 27.164 31.734 36.201 40 569 44.838 24.0 593 0.20 27.249 31 839 36.327 40.714 45 002 697 4.488 4.434 34.382 30.6 2.19 39.1 690 799 4.160 4.100 34.465 4.40 16.2 2.30 13.6 0.20 27.350 31.949 36.444 40 839 45 134 791 2 899 3.498 3.434.34.458 2.46 30.7 0.20 27.412 32.028 36 541 40.952 45 263 37.7 890 8 999 3.234 3 164 34.511 4.14 25.3 2.50 18.8 0.20 27.480 32.103 36 622 41.039 45 357 1101 2.965 34.568 3.041 53.0 2.50 40.5 0.20 27.544 32.171 36 695 41 118 45 440 1089 8 2.45 35.2 1197 2.883 2.801 34.600 4.12 53.0 0.20 27.584 32.216 36 744 41.170 45 496 1184 6 1394 2.678 34.702 0.20 27.676 32 311 36.841 41.270 45 598 1379 4 2.775 2.23 33.2 51.6 2 716 2.603 34.777 4.72 52.9 2.10 36.7 0.20 27.743 32.379 36.911 41.340 45 670 1579 1597 1794 2 681 2.551 34.822 0 20 27.783 32 420 36 953 41 384 45 714 1773 31.3 1.94 19.8 2 403 34.832 5.15 49.4 1.91 33 3 2.549 0.20 27.804 32 445 36,982 41.416 45 750 1978 2488 2 380 2.193 34.851 27.837 32 484 37 026 41.465 45 804 2455 1.912 34.842 5.33 51.3 1.90 28.7 0 20 27.852 32.507 37 057 41.504 45 850 2952 4 1.612 34.816 5.24 62.4 1.99 32.7 0.20 27.854 32 518 37 076 41.531 45.885 3212 5







Ship KN Cruise 1045 Station 16 Cast 1 DT Start 35 59.76 S .01 E 735 19 83/11/19 a t .03 S End 38 19 . 15 E 920 at PR TE SA OX os \$0 S1 S 2 54 AN ΗZ 0 20.106 20.106 35.532 5.5 106.6 25.141 29.408 33.581 37.664 41 659 281.4 0.00 0 00 0 0 10 20.052 20.050 35.529 5.7 111.7 25 153 29.421 33.596 37.679 41.675 280.6 1.98 .03 10.0 20 19.170 19.167 35.481 6.0 114.5 25.347 29.629 33.817 37.914 41.922 262.5 06 7.80 30 18.512 18.507 35.450 6.1 115 2 25.491 29 784 33 983 38.090 42.108 249 2 .08 40 17.447 17.440 35.414 6.1 112.5 25.727 30.038 34.254 38.377 42.412 227.1 10 50 15.584 15.577 35.324 5.3 95.3 26.094 30.438 34.685 38.840 42.904 192.4 .13 10.75 60 15.032 15.023 35.316 5.2 91 9 26 211 30 565 34 822 38 986 43 059 181 6 70 14.638 14.628 35.308 4.9 86.3 26.292 30.652 34.917 39.088 43.167 174.2 80 13.912 13.901 35.229 84 7 26 386 30 761 35 039 39 223 43 315 165 5 . 18 83.7 26.446 30.827 35.111 39.300 43.398 160.1 90 13.602 13.590 35.223 4.9 . 20 100 13.045 13.031 35.179 5.0 84 4 26 526 30 918 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25 384 29.668 33.858 37.957 41.967 27 3 53 15.979 15.971 35.363 5.14 0.46 6.0 0.31 26.035 30.371 34.611 38.759 42.817 52.3 103 13.105 13.091 35.189 8 9 0.86 8.7 0.06 26.522 30.912 35.206 39.405 43.511 102.2 153 12.378 12.358 35.113 8.1 0.82 13.1 0.02 26.608 31.014 35.322 39.535 43.655 151 203 11.284 11.259 34.916 5.53 8.2 0.90 12.1 0 01 26.663 31.093 35.423 39.658 43.800 200.9 253 10.652 10.621 34.907 1.11 15.4 0.02 26.772 31.214 35.558 39.805 43.959 251.0 302 9.565 9.531 34.774 4.73 13.0 1.36 18.6 26.855 31.322 35.689 39 959 44.135 299 404 7.740 7.700 34.582 16.1 1.70 25.7 26.990 31.500 35.908 40.219 44.433 5.186 34.449 4.87 6.230 499 1.89 25.3 27.094 31.640 36.085 40.430 44.678 494 605 4.879 4.831 34.352 23.7 2.07 32.2 27.181 31.762 36.240 40.617 44.897 28.3 2.22 31.0 701 4.249 4.196 34.350 5.02 27.249 31.846 36.340 40.733 45 027 795 3.707 3.650 34.354 28.5 2.33 28.0 27.308 31.919 36.427 40 833 45 140 896 3.412 3.349 34.413 4.50 39.6 2.43 34.8 27.384 32.003 36.518 40.932 45.245 887 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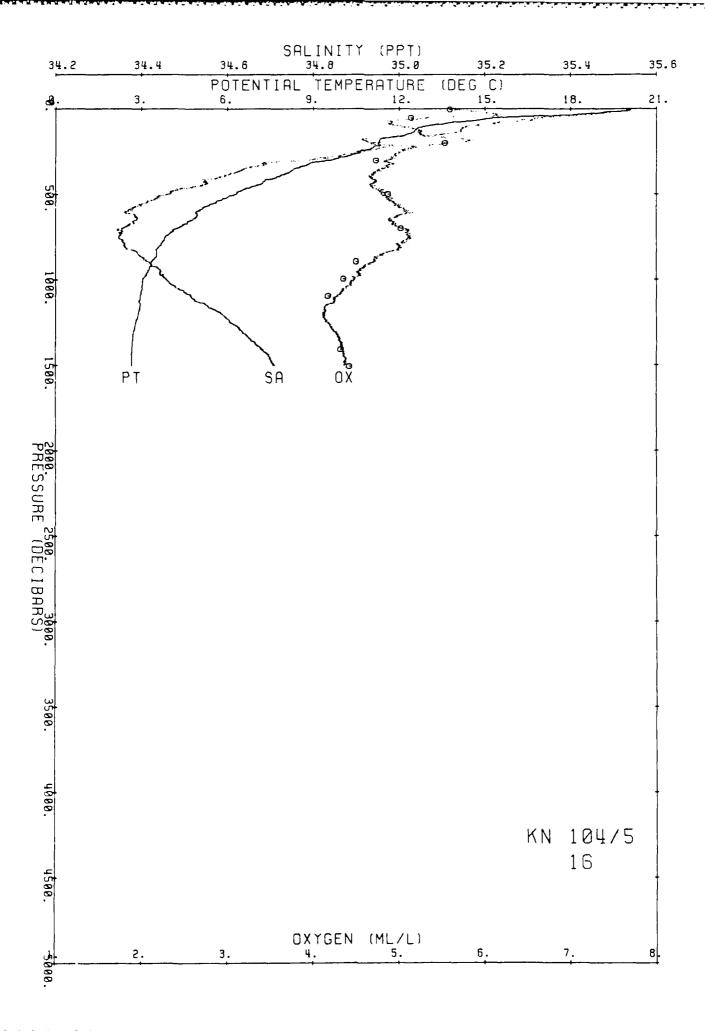
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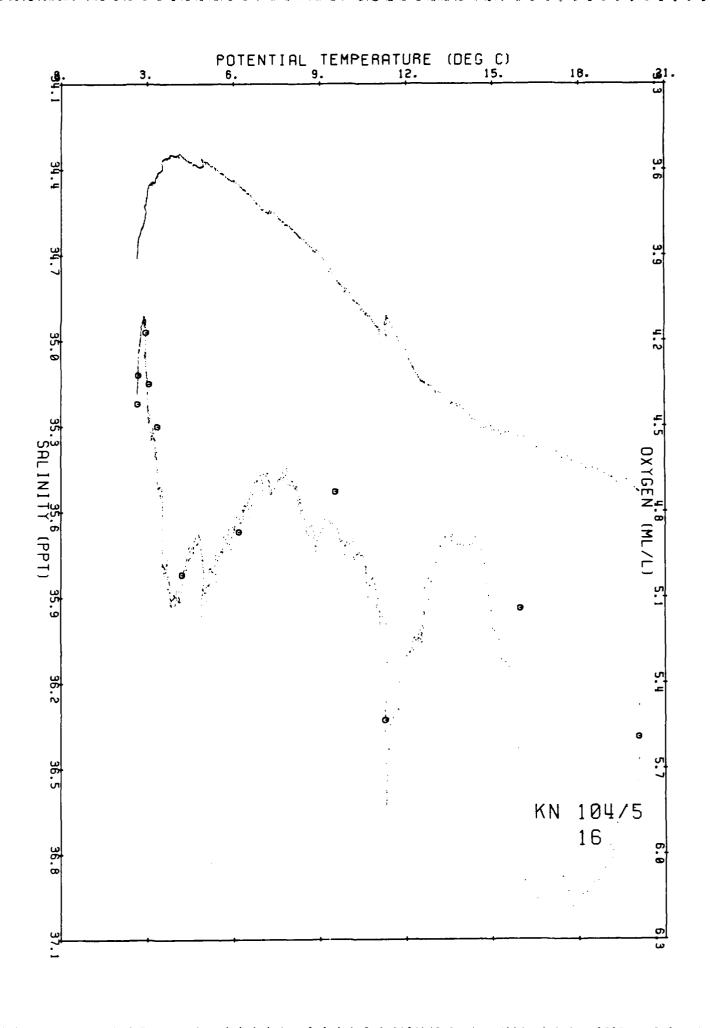
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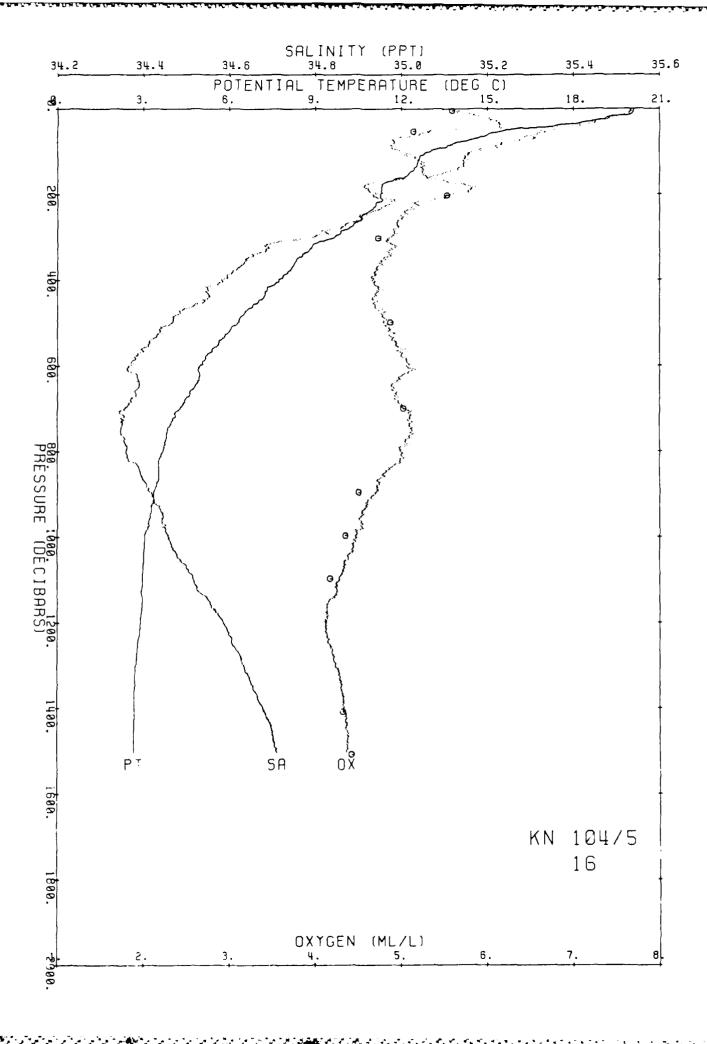
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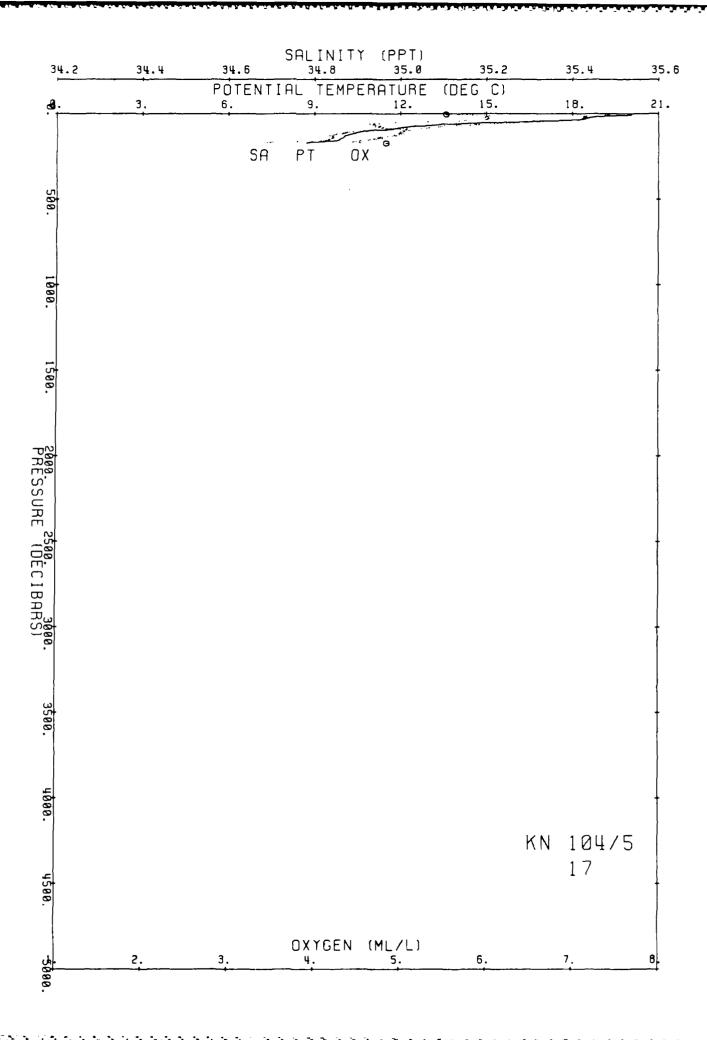


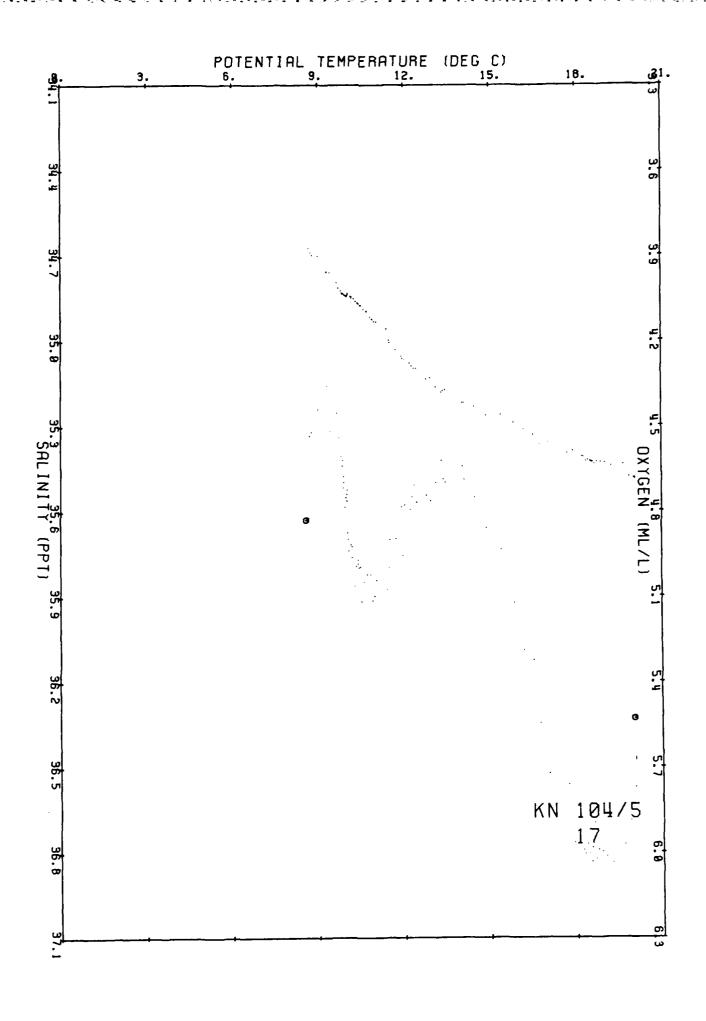


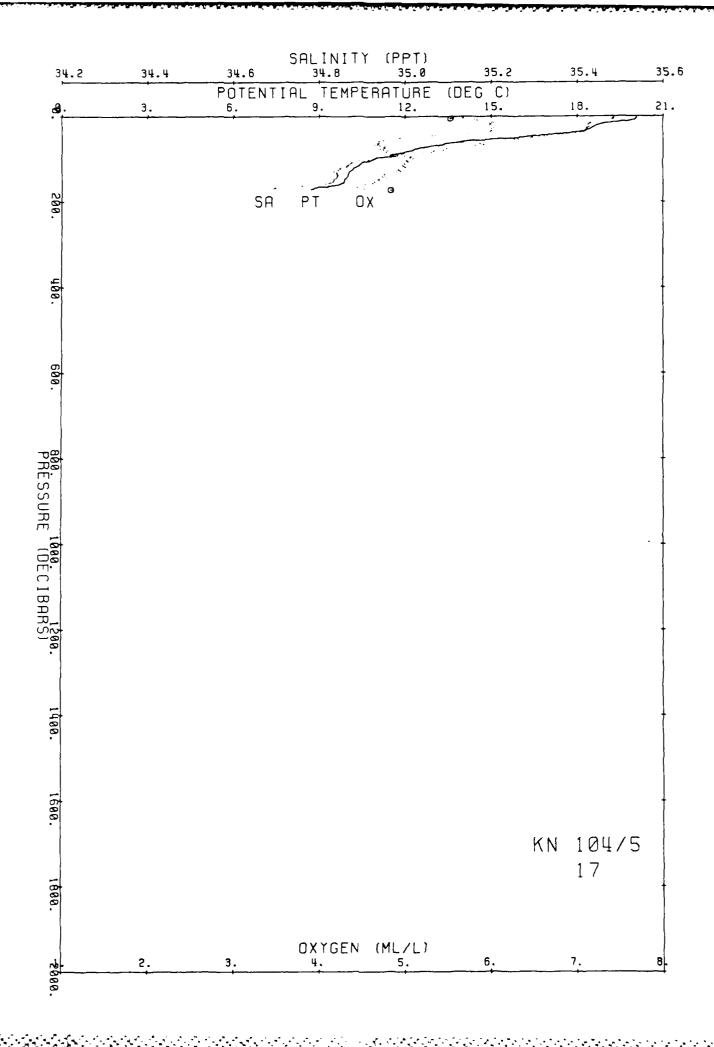


Ship KN Cruise 1045 Station 17 Cast 1 DT 59.05 E .64 S 36 19 83/11/19 Start at 1428 .90 S End 36 19 59.08 E at 1500 PR TE PŤ SA os so Sì S 2 S 3 OX **S4** AN ΗZ ΒV DE 0 20.067 20 067 35 486 5.7 110.2 25.116 29 384 33.558 37 642 41.637 283.7 0.00 0 00 0.0 10 19.865 19.863 35 480 5 9 114.1 25.165 29.436 33.614 37.700 41.699 279.4 .03 3 93 10.0 20 18 747 18.743 35 426 6 0 113 6 25.413 29.702 33.897 38.001 42.016 256.2 . 05 8.83 19.9 6 0 113.2 25.487 29.781 33.980 38.088 42.108 249 6 .08 30 18 446 18 441 35 422 4 80 29 9 40 17 717 17.710 35.397 .10 5.8 107.1 25 649 29.955 34.166 38.286 42.316 234.6 7 14 39 9 50 15.857 15 850 35 289 5 1 91 8 26.005 30.344 34.587 38.738 42.797 200.9 .13 10.60 60 14.065 14.057 35 219 4.6 .14 10 35 80.2 26.345 30.717 34.993 39.174 43.264 168.8 70 12 943 12,933 35,130 80 4 26 508 30 902 35 199 39 401 43 511 153 5 . 16 4 8 7 17 . 18 80 12.228 12.217 35.079 79.6 26.609 31.018 35.329 39.544 43.667 144.1 48 5 67 90 11 513 11 502 35 006 80.2 26.688 31.112 35.437 39.667 43.803 136.7 4.9 .19 5.02 89.7 100 10 910 10 898 34 924 5.1 82.6 26 735 31.172 35.510 39.752 43 900 132 4 . 20 99 6 3.89 120 10 289 10.275 34.851 80 6 26,789 31,239 35,590 39,845 44,006 127,7 5.1 .23 2.93 119.5 140 10.009 9.993 34.842 4.7 75.0 26.830 31.286 35.644 39 904 44 070 124 1 25 2.57 139 4 160 9.679 9 661 34 793 4 5 69.9 26.848 31.312 35.676 39.944 44.117 122.8 1.72 159 3 . 28 171 8.714 8 696 34.671 4.5 69.6 26 909 31.395 35.781 40.069 44.262 116.9 . 29 4.29 170.3 PR TE PT SA 02 SI PO N 3 N 2 NH4 SO S1 S 2 S 3 54 DE 5 20.037 20.036 35.488 5.53 5.9 0.29 1 8 0.01 0.20 25 126 29.394 33.569 37.653 41.649 12 19 374 19 372 35 456 6.2 0.24 1.8 0.01 25.275 29.554 33.739 37 833 41 839 26 .8.472 18 467 35.429 6 1 0 21 1 9 0 01 25 485 29.779 33.978 38.086 42 105 41 17 017 17.010 35.375 0.46 5.6 0.59 7.4 25.801 30.119 34.342 38.473 42 514 45 16 463 16 456 35 341 6.5 0.53 4 4 0.70 25.905 30.233 34.466 38.606 42 656 6.1 0.64 8.1 0.61 51 15.614 15.606 35.308 26.075 30.418 34.665 38.820 42 983 56 14 513 14.505 35.253 9.2 0.83 10.6 0.24 26 276 30.639 34.906 39.080 43 162 55.1 61 13 928 13.919 35.223 0.92 10.2 0.15 9.4 26.377 30.752 35 030 39.213 43.306 70 12.997 12.987 35.172 10.2 0.98 15.0 0.17 0.30 26.529 30.922 35.218 39.418 43.527 69 80 12.077 12.067 35.085 9.3 1.08 11.7 0.10 26.643 31.055 35 368 39 587 43.712 99 10.861 10 849 34.930 1.18 19.5 0.06 26.749 31.186 35.525 39.768 43.917 98.4 120 10.193 10.179 34.859 1.31 17.1 0.03 26.812 31.264 35.617 39.873 44 036 11.5 118.6 149 9.874 9.857 34.841 1.44 19.5 0.02 26.853 31.312 35.672 39.935 44 104 12.6 148 1 9 652 9.634 34.821 16.3 1.51 19.5 0.02 26.874 31.339 35.704 39.971 44.145 158.3 8.580 34.662 4.83 10.9 1.56 20.0 26.920 31.409 35.797 40.088 44.284

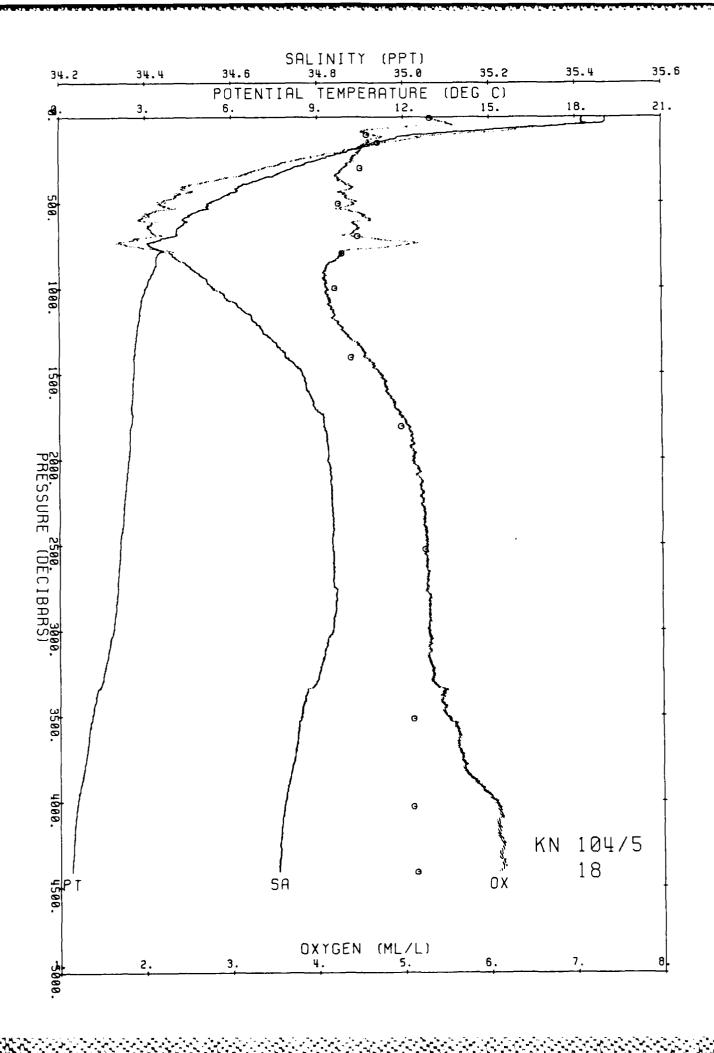
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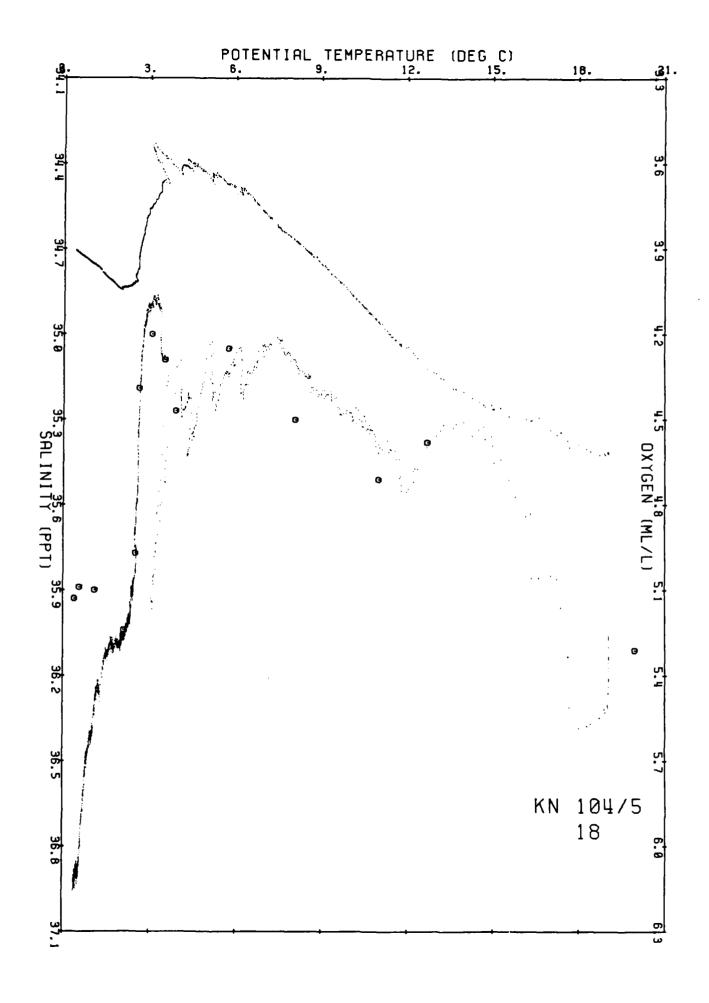


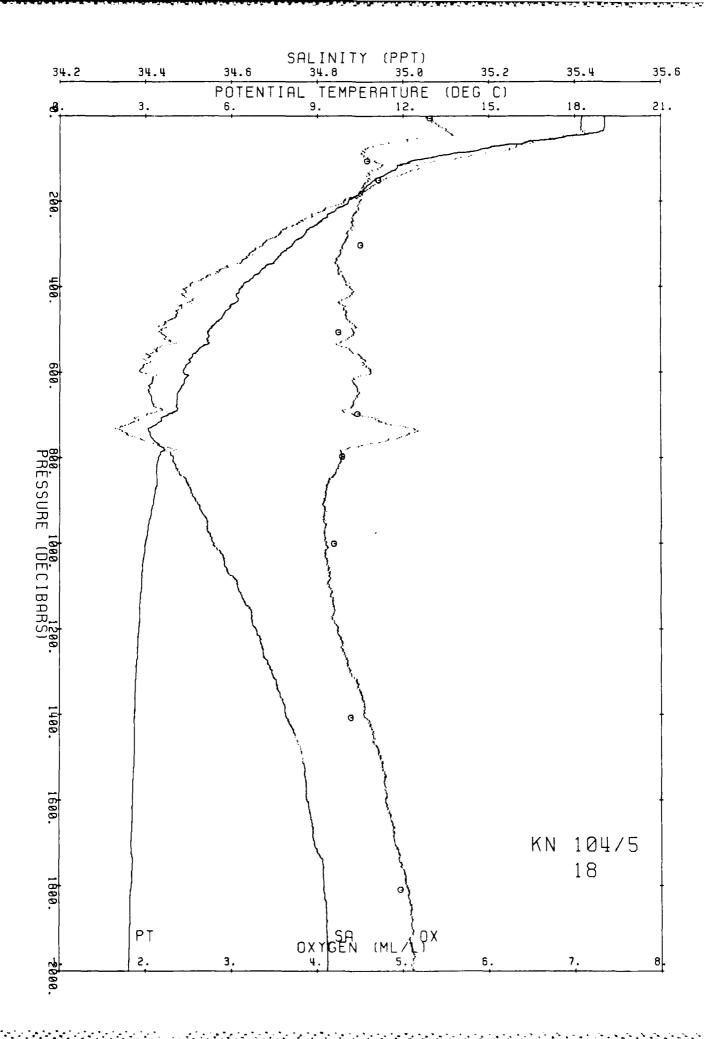




S	hip tari	t :		ise 59.				8 Cas		T 83/11/20
28	TE	PT	SA	οx	ာန	so \$1	82 83	\$4	AN HZ	BV DE
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						25.328 29.612 25.332 29.616				13 19.9 1.13 29.9
40	18.736	18.729 17.620	35.42	5.5	105.1	25.415 29.704 25.652 29.960	33.899 38.00	3 42.018 2	56.8 11 5	5.11 39.9 5.65 49.9
60	16 . 378	16.369 15.291	35.30	5 1	91.6	25.896 30.225 26.107 30.456	34.460 38.60	1 42.653 2	11 7 .15	3.76 59.8 3.17 69.8
80	14.691	14.679 13.610	35 . 24	7 4.5	79.2	26.233 30.594 26.416 30.797	34.858 39.02	88 43.107 1	.80.1 .19	5.31 79.7 7.60 89.7
100	12.719	12.706 11.804	35.12	4.6	77.2	26.547 30.945 26.658 31.075	35.247 39.45	3 43,567 1	.50.6 22 6	5.44 99.7 1.21 119.6
140	11.329	11.311 10.794	34.98	4.6	74.5	26.709 31.137 26.761 31.200	35.466 39.69	9 43.839 1	36.0 28 2	1.86 139.5 1.90 159.4
180	10.523	10.502	34.906	4.5	71.8	26.792 31.237 26.828 31.282	35.583 39.83	3 43.989 1	.28.9 .33 2	1.23 179.3 1.43 199.2
220	9.674	9.649		4.5	70.4	26.868 31.332 26.901 31.374	35.697 39.96	4 44.137 1	.22.2 .38 2	1.57 219.1 1.33 239.0
260 280	8.864	8.836	34.729	4.4	67.7	26.932 31.415 26.966 31.456	35.797 40.08	12 44.272 1	16.6 .43	2.31 258.8 2.37 278.7
300 320		8.126	34.67	4.3	65.3	26.998 31.496 27.028 31.536	35.895 40.19	5 44.400 1	.10.8 .48 .	1.31 298.6 2.28 318.5
340 360		7.521	34.624	4.2	63.0	27.049 31.562 27.076 31.600	35.975 40.28	9 44.506 1	.06.2 .52	1.89 338.4 2.19 358.3
380 400	6.765	6.730	34.50	4.3	63.3	27.090 31.623 27.113 31.654	36.054 40.38	36 44.622 1	.02.3 .56 :	1.66 378.1 2.02 398.0
450 500	5.983	5.944	34 . 48	4.3	62.1	27.151 31.703 27.201 31.770	36.153 40.50	44,757	96.9 63	1.64 447 7 1.90 497.3
550 600	4.862	4.819	34 425	4.4	61.6	27.240 31.821 27.268 31.861	36.298 40.67	76 44.955	88.4 .72	1.68 547.0
650 700	4.166	4 118	34.410	4.5	61.8	27.305 31.903 27.334 31.942	36.399 40.79	3 45.089	82.4 81	L.48 596.6 L.58 646.2
750	3.238	3.188	34 . 40	5.0	67.1	27.364 31.988	36 . 507 40 . 92	15 45 244	76.0 .89	L.49 695.8 L.61 745.4
900	3.350	3.287	34.46	7 4.1	55.3	27.415 32.030 27.473 32.092	36.609 41.02	3 45.337	67.3 1.00	L.67 795.0 L.38 894.1
1100	2.943	2.868	34.55	4.1	55.5	27.532 32.159 27.590 32.220	36 . 746 41 . 17	70 45.494	56.9 1.12	1.44 993.2 1.38 1092.2
1300	2.765	2.675	34.65	4.4	58.4	27.633 32.265 27.671 32.306	36 . 836 41 . 26	5 45.593	50.2 1.23	1.19 1191.1 1.13 1290.0
1400	2.711	2.606	34.72	4.7	63.1	27.702 32.338 27.734 32.370	36.902 41.33	31 45.661	45.5 1.32	1.01 1388.9 1.00 1487.7
1600	2.622	2.501	34.77	4.9	65.2	27.746 32.383 27.764 32.403	36 . 937 41 . 31	70 45.701	45.0 1.37 43.6 1.41	.65 1586.5 .81 1685.2
1900	2.594	2.457	34.82	5.1	67.8	27.782 32.420 27.792 32.431	36.966 41.40	00 45.732	42.8 1.45 42.3 1.50	.72 1783.8 .62 1882.5
2000 2100	2.512	2.359	34.824 34.83	5.2	68.4	27.797 32.438 27.807 32.449	36.987 41.43	23 45.758	42.2 1.54 41.7 1.58	.50 1981.0 .63 2079.6
2200 2300	2.406	2.236	34.83 34.83	5.2	69.2	27.813.32.457 27.819.32.464	37.006 41.44	4 45.782	41.5 1.62 41.2 1.66	.55 2178.0 .54 2276.5
2400 2500	2.304	2.118	34.83	5.3	69.6	27.824 32.471 27.829 32.477	37.022 41.46	4 45.805	41.1 1.71 40.9 1.75	.50 2374.9 .54 2473.2
2600 2700	2.240	2.035	34.83	5.3	69.2	27.834 32.484 27.838 32.489	37.035 41.47	79 45.822	40.8 1.79 40.7 1.83	.49 2571.5 .47 2669.8
2800 2900	2.220 2.161	1.938		5.3	69.6	27.845 32.497 27.849 32.502	37.052 41.49	8 45.843	40.5 1.87 40.2 1.91	.53 2768.0 .53 2866.2
3000 3200	1.843	1.599	34.80	5.3	69.2	27.851 32.507 27.850 32.513	37.072 41.52	8 45.882	39.1 2.03	.51 2964.3 .58 3160.4
3400 3600		. 996	34.750	5.6	72.1	27.844 32.518 27.845 32.526	37.102 41.57	4 45.945	36.0 2.18	.65 3356.3 .62 3552.1
3800 4000		. 595	34.72	6.0	76.8	27.845 32.531 27.847 32.540	37.128 41.63	11 45.993	33.2 2.32	.50 3747.7 .68 3943.1
4200 4400						27.846 32.543 27.848 32.547				.44 4138.3 .41 4333.3
4410						27.848 32.547				.08 4343.1
PR 6	TE 19.950	PT 19.949	SA 35 . 50	02 5 5 31	51 5.4	PO N3 1		30 - 81 .162 29.431	. \$2	
		19.929 19.653				0.17 1.1 0 0.16 0.9 0			33.612 37.6 33.691 37.	
		16,338 12,709				0.56 7.3 0 0.96 12.7 0			34.472 38.0 35.250 39.4	
		9.820				1.15 14.7 0 1.37 18.6 0			7 35.512 39.1 3 35.666 39.1	
302 407		8.089 6.720				1.72 22.8 0 2.00 25.7			35.895 40.1 36.075 40.4	197 44,402 299.2 407 44,643 403.6
507 597	5.805		34.50	4.25	26 . 1	2.21 25.6 2.52 28.4	27	193 31,749	36.204 40.	558 44.815 502.1 515 44.891 591.7
697 197	3.963	3.912	34.42	4.47	35.1	2.47 34.3 2.54 29.8	27.	. 337 31 , 941		841 45.141 690.5
1001	3.155	3.086	34.54	4.20		2.75 34.5 34.1	27	517 32.141	36.662 41.6	081 45.401 990.9 208 45.533 1186.9
1407	2.733		34.72	4.39	46 . 5	2.50 25.2 2.30 26.1	27	698 32,334	1 36 8→ 41	295 45.624 1392.0 350 45.681 1586.4
1810	2.642	2.512		4.97	45.0	2.00 26.2 1.99 28.5	27	. 783 32,421	36.955 41.	387 45.718 1788.4 416 45.750 1990.0
2527		2.113	34.840	5.24	37.3	1.94 25.8 1.94 28.9	27	835 32,484	37.028 41.4	470 45.811 2493.7 511 45.858 2986.6
3519	1.375	1.109	34.76	5.10	67.8	2.32 28.7 2.41 27.4	0.76 27	848 32.526	37.098 41.	567 45.935 3464.8 515 45.997 3965.5
4414						2.47 30.5				531 46.018 4337 3

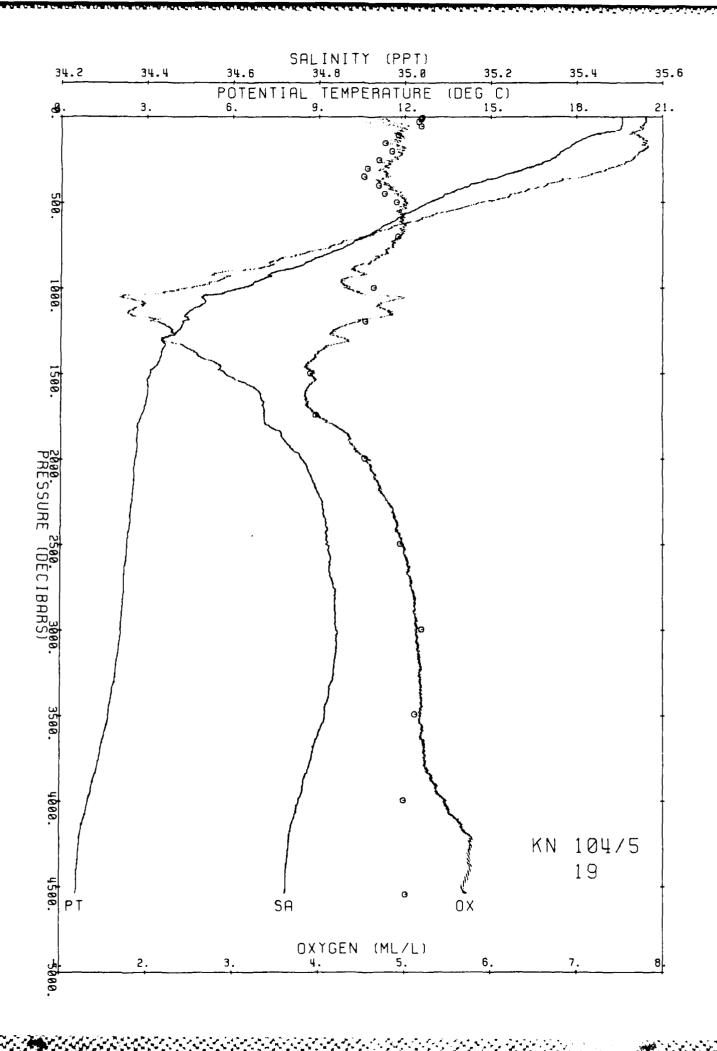


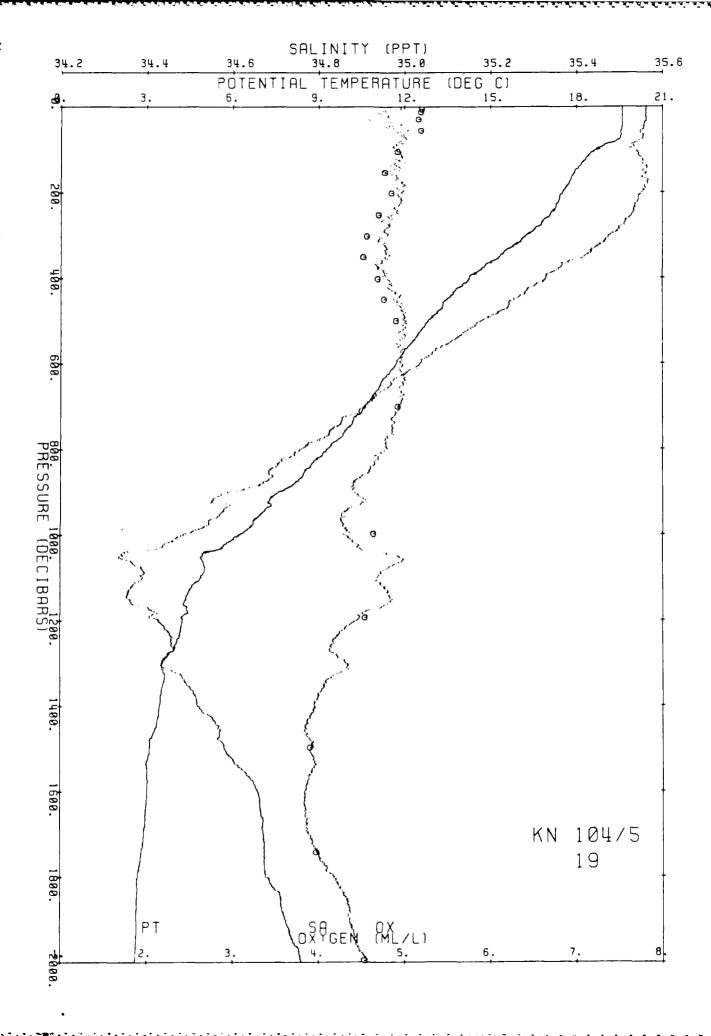




Ship KN 19 Cruise 1045 Station 1 DT .62 S 17 .18 E 38 Start at 1657 83/11/20 37 59.10 S 17 . 27 E 2021 a t TE 20 S1 DE 50 9.2 HZ BV 95.6 25.299 29.574 33.755 37.845 41.846 266.3 91.5 25.299 29.574 33.755 37.845 41.847 266 7 0.00 0.0 0 19.593 19.593 35.562 5.0 0.00 19.594 19.592 35.562 03 20 19.600 19.596 35.561 30 19.604 19.599 35.561 92.8 25.297 29.572 33.753 37.843 41 845 267.3 87.7 25.296 29.571 33.752 37.842 41.844 267 8 4.8 4.5 29.9 19.606 19.599 35.558 95.5 25.294 29.569 33.750 37.840 41.842 268.4 93.8 25.296 29.571 33.752 37.842 41.844 268 6 94.7 25.301 29.576 33.758 37.849 41.851 268 5 50 19.599 19.590 35.557 4.9 60 19.556 19.545 35.548 70 19.549 19.537 35.555 5.0 96.4 25.308 29.584 33.766 37.857 41.859 268.2 80 19.420 19.406 35.549 5.0 95.3 25.337 29.615 33.799 37.892 41.897 265.8 21 3.05 19.000 18.984 35.538 93.5 25.438 29.722 33.913 38.012 42.023 256.6 93.2 25.489 29.778 33.972 38.075 42.090 252.1 94.1 25.611 29.906 34.106 38.215 42.236 241.2 100 18.752 18.734 35.522 . 27 4.03 120 18.349 18.328 35.547 5.0 . 32 4.38 119.6 140 18.104 18.080 35.563 92.6 25.685 29.984 34.188 38.301 42.325 234.9 160 17.905 17.878 35.557 180 17.771 17.740 35.566 91.6 25.730 30.032 34.240 38.356 42.383 231.3 . 41 159.5 93.0 25.771 30.075 34.285 38.403 42.432 228.1 . 46 2.58 200 17.559 17.525 35.552 92.2 25.813 30.121 34.334 38.456 42.488 224.8 91.7 25.838 30.149 34.365 38.488 42.523 223.1 . 50 199 5.0 220 17.428 17.391 35.543 5.0 . 55 2.02 219.2 240 17.262 17.222 35.532 90.5 25.870 30.184 34.403 38.529 42.566 220.6 260 17:000 16:957 35:522 280 16:695 16:649 35:499 88.6 25.926 30.244 34.467 38.598 42.639 216.0 88.1 25.982 30.305 34.533 38.669 42.715 211.3 4.8 .63 2.99 259.1 2.98 .68 87.0 26.056 30.387 34.622 38.764 42.817 204.7 85.4 26.105 30.441 34.681 38.829 42.886 200.6 300 16.305 16.256 35.477 3.47 320 16:014 15:963 35:453 .76 2.82 318.8 340 15.526 15.473 35.434 85.3 26.202 30.547 34.796 38.951 43.016 191.8 83.7 26.257 30.609 34.866 39.029 43.101 187.0 83.0 26.315 30.674 34.937 39.106 43.185 181.9 360 15.107 15.052 35.383 3.00 358.6 380 14.758 14.701 35.359 .87 3.09 378.4 400 14.324 14.265 35.330 82.8 26.387 30.754 35.025 39.202 43.287 175.5 450 13.550 13.486 35.255 4.9 2.65 448.0 500 12.893 12.824 35.178 550 12.340 12.266 35.107 600 11.796 11.718 35.036 82.2 26.622 31.029 35.339 39.553 43.675 155.8 1.15 81.9 26.671 31.090 35.411 39.636 43.769 151.8 1.23 1.95 547 1.88 597 650 11.253 11.170 34.969 81.0 26.721 31.151 35.484 39.720 43.863 79.0 26.770 31.212 35.556 39.803 43.957 143.6 1.38 700 10.712 10.625 34 906 1.89 696 750 10.094 10.004 34.834 77.0 26.822 31.278 35.635 39.895 44.061 138.9 1.45 9.382 9.291 34.756 7.578 34.589 74.5 26.880 31.352 35.725 40.000 44.181 133.4 1.52 66.3 27.014 31.525 35.937 40.250 44.467 119.6 1.64 800 A A 2.10 795.6 900 2.28 894.8 62.5 27.117 31.661 36.104 40.448 44.694 108.6 1.76 65.8 27.204 31 783 36.259 40.634 44.911 98.4 1.86 61.5 27.304 31.898 36.390 40.780 45.072 88.4 1.95 1000 6.329 6.236 34.486 4.906 34.392 4.270 34.429 1100 4.998 1 96 1092 9 1200 4.365 1.92 1191 1300 3.656 3.559 34.435 3.483 34.521 4.3 58.8 27.381 31.994 36.504 40.912 45.221 53.8 27.457 32.072 36.582 40.992 45.302 79.9 2.04 1.77 1290 1400 3.588 4.0 73.5 2.12 1.56 1389.8 52.9 27.540 32.163 36.683 41.101 45.419 51.7 27.610 32.235 36.756 41.176 45.495 52.2 27.632 32.260 36.784 41.207 45.530 1500 3.119 34.581 3.229 1.50 1587.4 59.4 2.25 57.6 2.31 1600 3.154 3.036 34.659 2.911 34.672 92 1686.1 1700 3.037 1800 2.829 2.697 34.677 2.657 34.722 55.8 27.655 32.289 36.819 41.247 45.575 58.2 27.694 32.329 36.860 41.289 45.617 55.3 2.36 1.01 1784.8 1900 2.797 52.2 2.42 1.13 1883.4 2.599 34.760 61.0 27.730 32.366 36.898 41.328 45.657 49.4 2.47 1.09 1982.0 2000 2.563 34.782 2.507 34.798 61.8 27.750 32.387 36.920 41.351 45.681 63.0 27.768 32.406 36.941 41.373 45.704 .83 2080 5 .80 2179 0 2100 2.720 4.6 48.0 2.52 46 .8 2 .56 2.672 2200 2.618 445 34.811 64.7 27.784 32.424 36.959 41.393 45.726 45.7 2.61 2300 65.1 27.794 32.435 36.971 41.406 45.740 65.9 27.802 32.445 36.985 41.421 45.758 .61 2375.8 .67 2474.2 2400 2.588 2.405 34.819 4.9 45.2 2.65 2500 2.505 2.315 34.820 44.6 2.70 66.7 27.810 32.454 36.994 41.432 45.769 67.1 27.819 32.465 37.006 41.445 45.784 67.6 27.826 32.473 37.015 41.454 45.793 2.284 34.827 2.219 34.831 44.3 2.74 2600 2.484 5.0 .56 2572.5 2700 2.427 5.1 64 2670.8 2.424 2.206 34.839 51 2769 2800 67.6 27.830 32.478 37.021 41.462 45.802 67.7 27.836 32.485 37.029 41.471 45.812 43.5 2.88 43.3 2.92 2900 2.383 2.156 34.839 5.1 50 2867.1 2.345 2.108 34.841 53 2965.3 3000 3200 2.212 1.959 34.838 68.4 27.845 32.499 37.047 41.493 45.838 68.0 27.847 32.506 37.060 41.511 45.861 42.4 3.00 58 3161 1.770 34.822 3400 2.040 41.8 3.09 .54 3357.3 3600 1.549 34.801 67.8 27.847 32.512 37.072 41.529 45.885 40.9 3.17 1.834 67.8 27.846 32.518 37.085 41.549 45.911 70.3 27.848 32.530 37.106 41.578 45.948 .61 3748.7 .75 3944.1 3800 1.609 1.307 34.778 5 2 39.7 3.25 .993 34.754 .701 34.733 1.307 37.3 3.33 4000 73.6 27.850 32.540 37.125 41.605 45.983 73.4 27.850 32.542 37.130 41.613 45.994 72.7 27.850 32.544 37.133 41.617 45.999 4200 1.029 5.8 34.7 3.40 .74 4139 4400 . 955 608 34.725 5.8 34.5 3.47 41 4334.4 .560 34.722 . 922 34.3 3.52 PR TE PT 02 SO SA SI PO N3 N2 NH 4 51 82 83 5 19.484 19.483 35.553 5.20 5.1 0.26 1.2 0.06 0.20 25.320 29.597 33,780 37.871 41.875 19.493 19.491 35.553 5.19 5.4 0.23 1.4 0.06 25.318 29.595 33.778 37.869 41.872 29 19.497 19.492 35.553 5.16 55 19.491 19.481 35.553 5.19 5.5 1.3 0.06 0.20 25.318 29.595 33.777 37.869 41.872 25.321 29.598 33,780 37.872 41.876 105 18:527 18:509 35:558 4:92 153 18:037 18:011 35:560 4:77 7.0 0.29 2.9 0.03 0.35 3.1 0.03 25.574 29.866 34.064 38.170 42.187 25.700 30.000 34.205 38.319 42.344 103.9 152.1 6.1 201 17.678 17.644 35.563 4.85 0.03 25.792 30.098 34.310 38.429 42.460 0.42 4.3 0.51 6.0 25.906 30.221 34.442 38.570 42.609 26.087 30.420 34.657 38.802 42.857 252 17.146 17.104 35.541 4.70 0.02 249.8 303 16.163 16.114 35.474 4.56 8.3 351 15:179 15:125 35:403 4:52 402 14:327 14:267 35:339 4:69 0.61 26.256 30.607 34.862 39.024 43.095 26.393 30.760 35.031 39.208 43.294 8.6 0.65 398 13.593 13.529 35.271 4.76 26.496 30.877 35.162 39.352 43.451 499 12.987 12.918 35.204 4.90 700 10.763 10.676 34.915 4.92 0.83 10.0 1.07 14.9 26.568 30.962 35.259 39.461 43.570 26.768 31.209 35.552 39.798 43.951 9 0 10.8 23.7 997 6.183 6.091 34.474 4.64 27.126 31.674 36.121 40.468 44.717 1194 4.414 4.318 34.414 4.54 33.3 27.287 31.880 36.370 40.760 45.051 1181.0 1497 3.283 3.172 34.580 3.90 27.534 32.156 36.675 41.091 45.408 1743 2.990 2.861 34.673 3.97 2.619 34.758 4.53 59.2 27.637 32.267 36.792 41.216 45.540 27.726 32 362 36.894 41.323 45.652 1722 2.767 1996 53.5 1971.0 2497 2.504 2.314 34 822 4.95 41.3 .95 20 27.804 32.447 36.986 41.423 45.759 27.839 32.488 37.032 41.474 45.816 2953 27.850 32.511 37.068 41.521 45.874 3438 2997 2.339 2.103 34 844 5.20 48.9 1.86 23.2 674 34.816 5 64.3 69.7 3493 1.952 99 26 1.330 1 015 34 761 4.99 0.554 34 723 5 01 0.20 27.853 32.533 37.109 41 580 45.950 3930 0 80 27.851 32.546 37.134 41.619 46.001 4466 3997 2 .21 25.0

4548

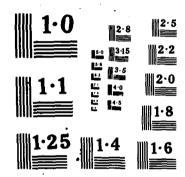




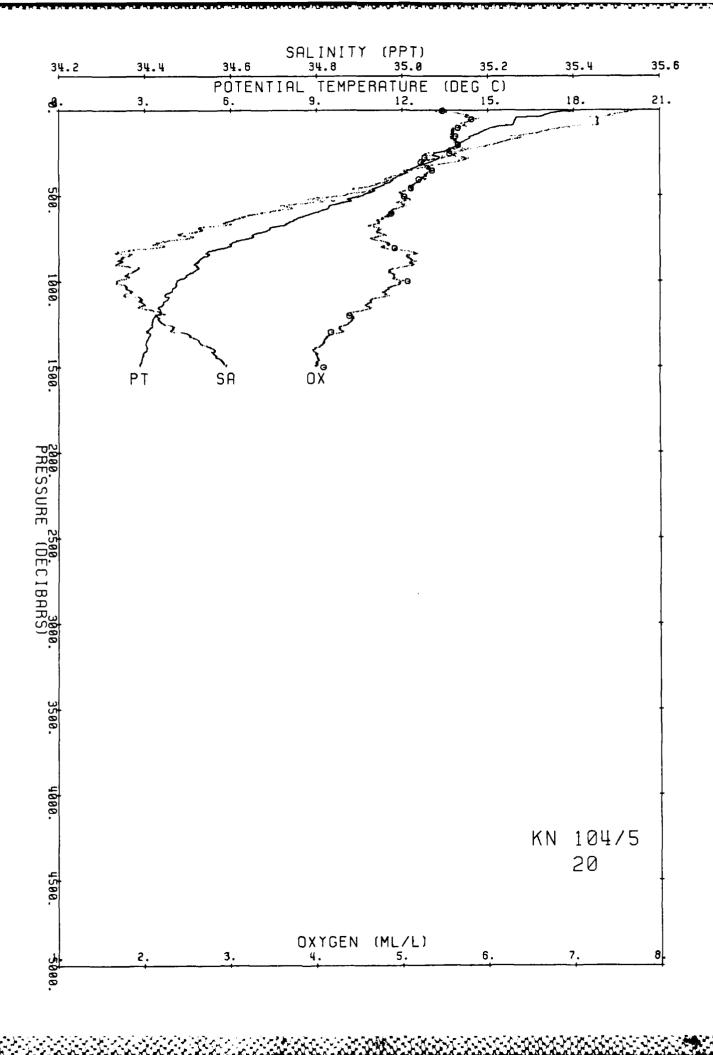
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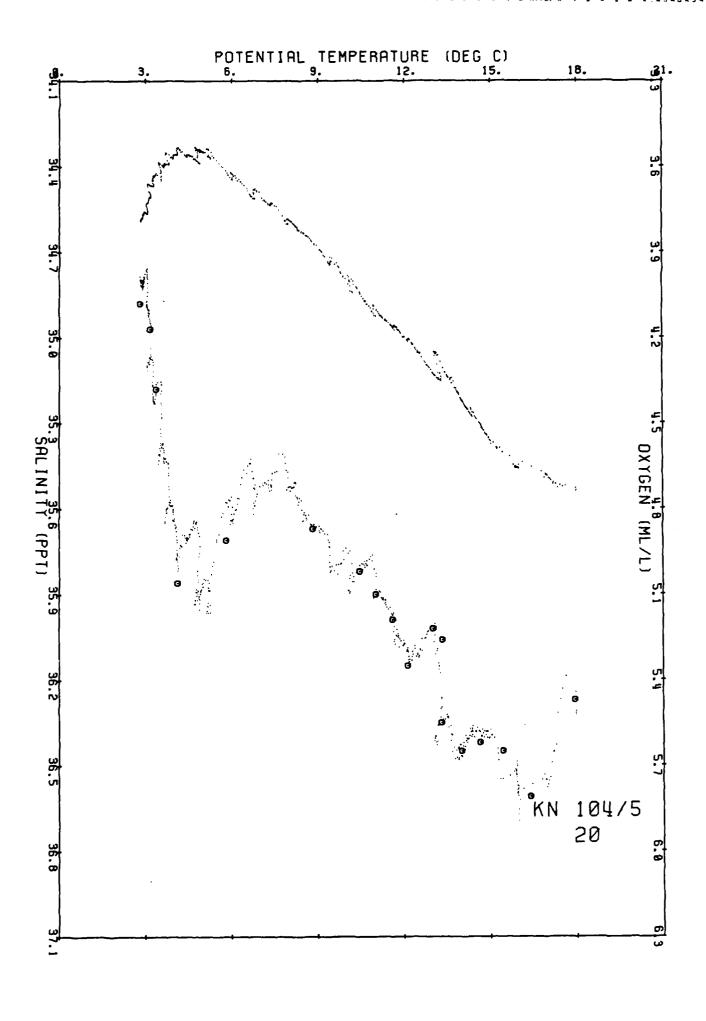
End	38	6.63 S	16	2.18 E	a t	353	00/11	/ 2 1	
Lud	30	0.00 3	10	2.10 L	a t	3 9 9			
PR TE	PT	SA OX O	s so	S1 S2		C.A	AM 117	вv	DE
	17.980 35				S3	54	AN HZ		
10 17 514				· 29.991 34.197 · 30.103 34.317				0.00 5.71	0.0 10.0
	17.180 35			30.181 34 400				4.76	19.9
	16 975 35			30 . 211 34 . 434				2 90	29.9
40 16 458				30.321 34.553				5 64	39.9
	15.975 35			30.442 34.682				5 93	49 8
60 15.959				30.447 34.687				1 24	59 8
70 15.929				30.455 34.696				1 52	69.7
80 15.910	15.897 35			30.461 34.702				1.31	79 7
90 15.705	15 691 35	5 416 5.7 102	6 26.139	30.480 34.725	38.877	42.939	189.5 .18	2 22	89.7
100 15.245	15 230 35	5 386 5.6 99	9 26 220	30.569 34.822	38.982	43.052	182.1 .20	5 05	99 6
120 14 856	14.838 35	5.335 5.6 98	.3 26.267	30.623 34 884	39.051	43.127	178.2 .24	2 74	119 5
140 14.616				30.653 34.918				2.01	139 5
160 14.396				30.687 34.956				2 18	159 4
180 14.179				30.713 34.987				1 89	179 3
200 14.014				30.729 35.006				1 42	199 2
220 13.768				30.741 35.022				1 08	219 1
240 13.529				30.777 35.064				2 28	239 0
260 13.127				30 809 35 104				2 00	258 9
280 13.334				30.839 35.129				2 29	278 8
300 13.086 320 12.677				30.877 35.172				2 32	298 7
340 12.424				30.921 35.224 30.950 35.258				2 44	318 6 338 5
360 12 201				30.930 33.238				2.00	358 4
380 12.012				31.009 35.325				2.21	378 2
400 11.743				31.038 35.360				2 00	398.1
450 11 214				31.112 35.445				2.06	447.8
500 10 644				31.187 35.532				2 06	497.5
550 9.759	9.696 34			31.270 35.634				2 16	547 2
600 8.955	8 889 34			31.359 35.741				2.25	596.8
650 8 1.99	8 131 34			31.438 35.837				2 12	646 5
700 7.406	7 337 34			31.523 35.940				2.22	696.1
750 6.749	6 678 34			31.607 36.040				2 23	745.7
800 5.975	5 904 34			31.668 36.119				1.88	795.3
900 4.801	4 728 34			31.760 36.241				1 65	894.4
1000 4.204	4.127 34	4.336 5.0 68	.7 27.245	31.844 36.340	40.734	45.030	91.5 1.41	1.61	993.5
1100 3.895	3.812 34	4.391 4.7 63	9 27.321	31.928 36.431	40.833	45.136	84.5 1 50	1.62	1092.6
1200 3.450	3.363.34	4.427 4.4 59	6 27.394	32.012 36.527	40.940	45.253	77.3 1.58	1.64	1191.5
1300 3.257	3 164 34	1.489 4.3 57	.8 27.462	32.085 36.605	41.022	45.340	71.1 1.66	1 52	1290.5
1400 3 177	3.075 34			32.154 36.675				1.47	1389.4
1497 2.937	2 830 34	1 590 4.0 53	.5 27.573	32 205 36.732	41 157	45.482	61.1 1.78	1.31	1485.2
PR TE	PT	SA (2 S		N3 N2 NH		\$1		\$3	S4 DE
			2				10 34 218 38		
13 17.399			8 0.18	0.9 0.01			40 34 356 38		
	17.250 35		.8 0.17	0.8 0.01			73 34.391 38 46 34 670 38		
102 15.432			.2 0.17	0.6 0.01 1.9 0.39 0.			46 34.579 38 53 34.803 38		
152 14 655			8 0.18 8 0.27	2.8 0.15			53 34.803 38 53 34.917 39		
203 14.011			6 0.29	3.7 0.02			34.91/ 39 34.35.010 39		
253 13.329			1 0.41				34 35.010 39 33 35.093 39		
278 13.369			3 0.52	7.9 0.01			47 35.136 39		
303 13 050			7 0.63	7.9			98 35.193 39		
		5.004 5.35 5							3 638 350 4
		1.968 5.19 7							3 749 400 6
		912 5.10 7							3 860 450 5
		. 855 5.02 9							3 963 500 3
		665 4.87 12							4 225 599.1
	7 417 34	540 14	4 1.62		26.99	98 31 5	14 35.930 40	246 4	4.467 693 6
905 5 976		420 4.91 18			27 11	19 31.6	75 36 129 40	.483 4	4 739 797.6
901 4 937	4 863 34	367 23	9 2.01	26.6	27.18	39 31.70	69 36 246 40	623 4	4 901 891 9
1000 4 183	4 106 34	331 5.06 28	4 2.14	29.1	27.24	43 31 8	43 36.339 40	734 4	5 031 989.5
	3 674 34	372 26	. 7 2.30	22.3					5 149 1097.2
1202 3 432		4 429 4.38 41							5 259 1188.9
1297 3 250		4 483 4.17 48	3 2.56	30 4					5 337 1203.2
	3 081 34								S 418 1388.3
1502 2 922	2 815 34	591 4.08 51	7 2.53	17 8 J.	52 27 51	76 32 20	07 36.735 41	161 4	5 486 1485 3

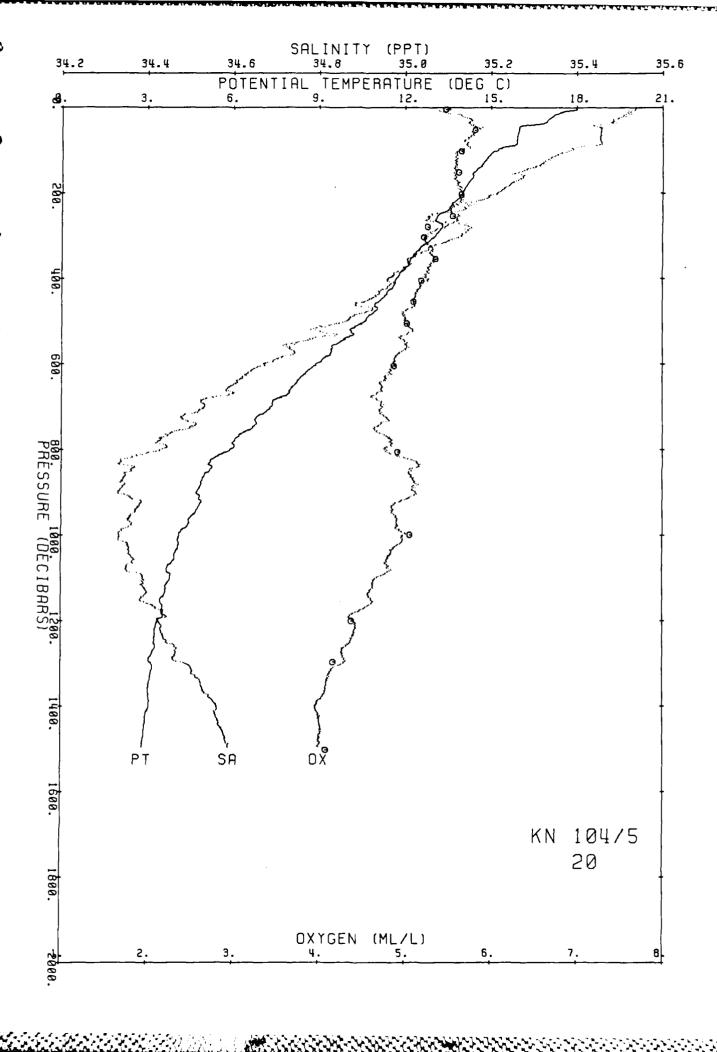
AGULHAS RETROFLECTION CRUISE NOVEMBER-DECEMBER 1983 HYDROGRAPHIC (CTD) DATA(U) LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES NY D B CAMP ET AL. FER LDGO-86-1 N00014-84-C-0132 F/G 8/1 2/5 AD-A168 163 UNCLASSIFIED NL



NATIONAL BUREAU OF S MIGROGOPY RESOLUT TEST





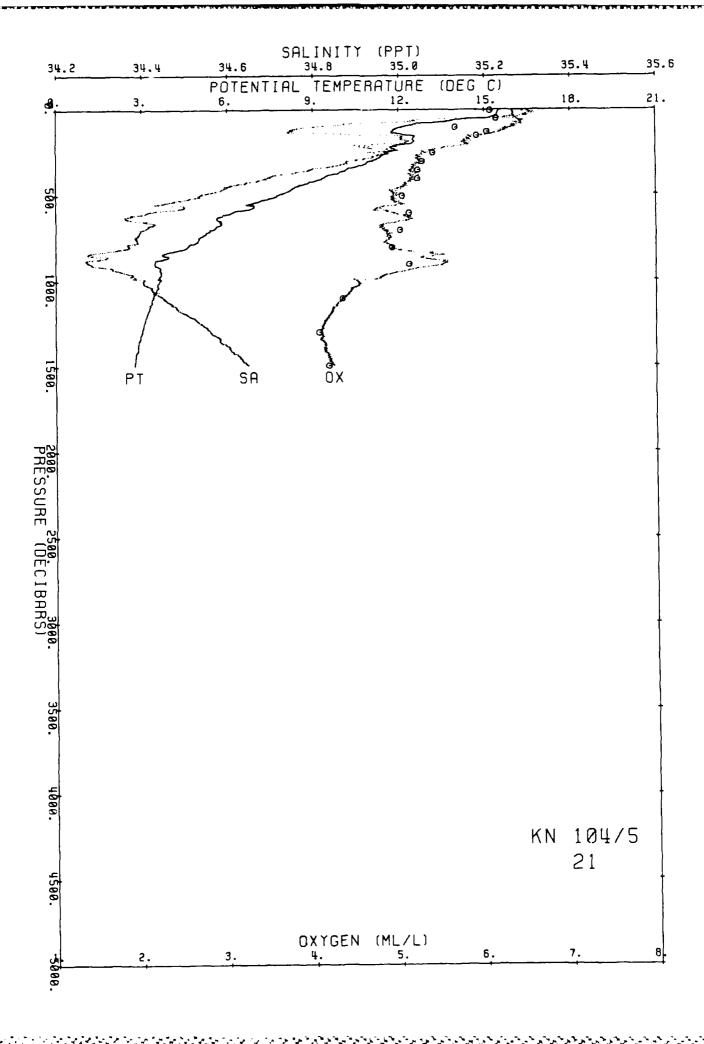


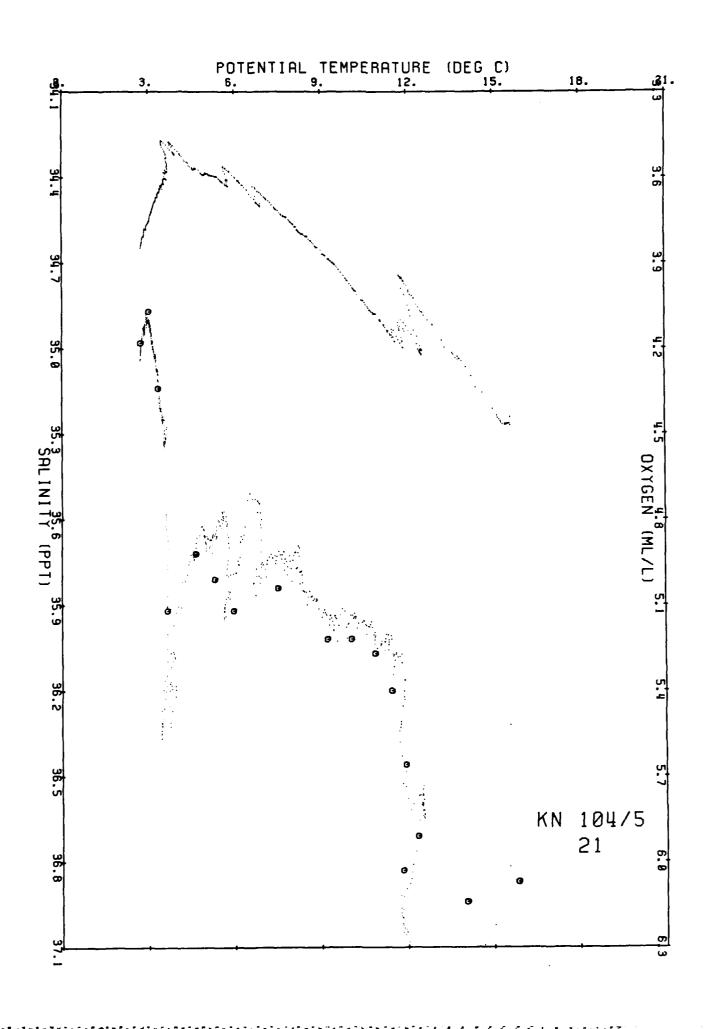
PR TE PT SA ΟX OS so 31 S 2 **S**3 ΗZ 0 15.609 15.609 35.271 4.4 79.2 26.046 30.389 34.637 38.791 42.855 195.3 0.00 0.00 10 15.489 15.487 35.267 6.5 115.9 26.070 30.416 34.665 38.822 42.888 193.3 .02 2.76 0.0 20 15.468 15.465 35.268 6.5 116.1 26.076 30.422 34.672 38.829 42.895 193.1 . 04 30 15.455 15.450 35.268 6.5 114.7 26.079 30.426 34.676 38.833 42.899 193.1 .06 1.03 6.3 112.4 26.108 30.457 34.710 38.869 42.938 190.7 40 15.307 15.301 35.262 6.2 109.6 26.133 30.487 34.745 38.910 42.984 188.7 50 15.029 15.022 35.214 .10 60 13.934 13.925 35.044 6.4 110.6 26.238 30.613 34.892 39.077 43.170 179.0 70 13.668 13.658 35.022 6.4 110.1 26.276 30.657 34.941 39.131 43.229 175.5 80 12.755 12.744 34.900 6.4 107.5 26.367 30.767 35.068 39.275 43.390 167.1 90 12.424 12.413 34.855 6.4 105.9 26.397 30.804 35.112 39.326 43.447 164.4 3.11 .18 100 12.102 12.089 34.802 6.3 104.4 26.419 30.832 35.147 39.367 43.494 162.6 2.63 120 11.839 11.824 34.752 6.2 102.8 26.430 30.849 35.170 39.395 43.527 162.0 . 21 1.38 . 25 140 12.064 12.046 34.849 6.1 100.5 26.464 30.877 35.193 39.413 43.541 159.4 2.25 139.4 . 28 1.92 160 12.573 12.552 35.008 5.8 97.6 26.489 30.891 35.196 39.406 43.523 157.8 159.3 179.2 180 12.546 12.522 35.016 5.8 96.3 26.501 30.904 35.209 39.420 43.538 157.2 .31 1.38 200 12.404 12.377 34.985 5.8 96.1 26.505 30.911 35.220 39.433 43.554 157.3 . 34 88 199.1 . 37 3 . 50 220 11.748 11.720 34.920 5.5 91.0 26.581 31.000 35.322 39.548 43.681 150.4 219.0 240 11.832 11.801 34.980 5.3 87.3 26.612 31.030 35.349 39.573 43.705 148.0 .40 2.20 238.9 260 11.638 11.605 34.975 5.3 86.4 26.645 31.067 35.390 39.618 43.753 145.3 .43 2.31 258.8 280 11.385 11.350 34.938 5.2 85.1 26.664 31.091 35.420 39.653 43.793 143.9 .46 1.79 278.7 300 11.119 11.082 34.899 5.2 84.9 26.682 31.115 35.450 39.688 43.833 142.5 . 49 1.79 298.6 320 10.825 10.786 34.871 5.2 83.4 26.714 31.153 35.494 39.739 43.889 139.8 2.30 318.5 . 52 340 10.473 10.433 34.831 5.2 82.5 26.746 31.193 35.541 39.792 43.950 137.1 2.30 338.4 . 55 360 10.137 10.095 34.780 5.1 81.5 26.764 31.219 35.574 39.833 43.998 135.5 . 57 1.84 358.3 380 9.652 9.609 34.715 5.2 81.1 26.796 31.261 35.627 39.897 44.071 132.6 . 60 2.36 378.2 400 9.419 5.1 80.3 25.818 31.289 35.660 39.934 44.114 130.7 9.375 34.694 .63 1.95 398.0 450 8.462 8.415 34.599 5.1 77.1 26.896 31.389 35.782 40.077 44.276 123.5 . 69 2.34 447 500 7.811 7.761 34.537 4.9 74.2 26.946 31.454 35.862 40.171 44.384 119.0 . 75 1.89 6.774 34.440 5.0 73.4 27.009 31.541 35.972 40.304 44.539 112.8 550 6.826 . 81 2.17 600 6.252 6.199 34.416 4.9 71.4 27.066 31.612 36.057 40.402 44.650 107.4 2.02 650 5.853 5.797 34.408 5.1 72.5 27.111 31.667 36.121 40.475 44.732 103.3 .92 1.78 700 5.485 5.426 34.399 4.8 68.3 27.149 31.714 36.177 40.540 44.806 99.8 . 97 750 5.076 5.015 34.386 4.9 68.8 27 187 31.763 36.236 40.609 44.884 96.1 1.02 1.69 745.5 800 4.670 4.607 34.371 4.9 68.7 27.221 31.807 36.291 40.674 44.958 92.7 1.06 1.62 795.1 900 3.529 3.466 34.282 5.5 75.0 27.268 31.885 36.398 40.810 45.122 86.7 1.15 1.51 894.3 1000 3.691 3.618 34.404 4.5 61.5 27.351 31.962 36.471 40.878 45.185 80.3 1.24 1.55 993.3 1100 3.487 3.407 34.452 4.3 58.7 27.410 32.026 36.540 40.952 45.264 75.1 1.31 1.42 1092.4 1200 3.269 3.183 34.508 4.2 56.4 27.476 32.098 36.617 41.034 45.351 69.2 1.39 1.50 1191.3 1.300 3.111 3.019 34.562 4.1 55.1 27.534 32.160 36.683 41.104 45.424 64.0 1.45 1.40 1290.3 1400 2.965 2.866 34.606 4.1 55.2 27.583 32.213 36.739 41.164 45.488 59.7 1.51 1.30 1389.1 2.754 34.649 4.2 56.7 27.627 32.260 36.789 41.216 45.542 55.9 1.57 1492 2.860 1.28 1480.1 PR ŤE PT SA 0.2 SI PO М 3 N2 NH4 SO S 1 52 83 4 15.841 15.840 35.269 6.07 5.0 0.35 1.3 0.03 0.20 25.992 30.331 34.575 38.725 42.785 4.4 14 15.488 15.486 35.269 5.8 0.30 1.4 0.03 26.072 30.418 34.667 38.824 42.890 26 15.433 15.429 35.269 5.2 0.28 1.3 0.03 26.085 30.431 34.682 38.839 42.906 26.2 4.2 0.39 2.4 0.07 52 14.052 14.044 35.090 6.14 26,248 30,621 34,898 39,080 43,171 51.6 4.2 0.53 4.8 0.20 0.26 26.389 30.792 35.097 39.307 43.424 77 12.600 12.590 34.889 76 5 4.8 0.61 6.1 0.52 5.2 0.65 5.6 0.42 102 11.945 11.932 34.774 5.66 26.427 30.844 35.162 39.385 43.515 100.7 127 11.834 11.818 34.764 6.03 26.441 30.860 35.181 39.406 43.538 125 8 152 12.354 12.334 34.940 5.91 6.4 0.54 6.6 0.06 26,479 30,886 35,195 39,410 43,532 150.5 202 12.470 12.443 35.002 6.0 0.63 6.2 0.02 6.3 0.86 9.1 0.01 26,506 30,910 35,217 39,429 43,549 200.3 253 11.473 11.441 34.928 5.40 26.639 31.064 35.392 39.623 43.761 250.4 303 10.913 10.876 34.889 5.27 0.99 9.2 0.01 6.5 26.712 31.149 35.488 39.731 43.880 300.1 353 10.091 10.050 34.788 5.22 1.15 13.1 26.778 31.234 35.590 39.850 44.015 7.5 350.1 403 9.262 9.217 34.682 5.22 8.2 1.30 15.7 26.834 31,309 35.683 39.961 44.143 399.5 504 7.561 7.511 34.517 5.04 1.68 21.3 26.966 31.481 35.894 40.209 44.428 12.0 499 4 604 6.024 5.971 34.392 5.12 14.7 1.94 22.8 27.076 31.628 36.078 40.429 44.682 598.2 704 5.372 5.313 34.393 5.01 21.3 2.11 23.7 27.158 31.726 36.192 40.558 44.825 805 4.729 4.665 34.379 4.92 28.9 2.25 29.0 27.221 31.806 36.288 40.669 44.952 903 3.727 3.661 34.311 5.12 28.2 2.35 26.3 27.272 31.884 36.392 40.798 45.105 3.621 34.409 1004 3.695 32.0 25.0 27.354 31.966 36.474 40.881 45.188 3.355 34.450 4.34 45.3 2.54 30.7 27.413 32.031 36.546 40.959 45.272 1091.6 1103 3.435 1202 3.289 3.203 34.499 45.3 2.58 27.6 27.467 32.088 36.607 41.023 45.340 1189.4 3.019 34.558 4.07 51.5 2.58 29.6 1301 3.112 27.531 32.157 36.680 41.100 45.421 1287.0 2.965 2.866 34.604 57.1 2.56 31.3 27.581 32.212 36.738 41.162 45.486 1385.0 1400

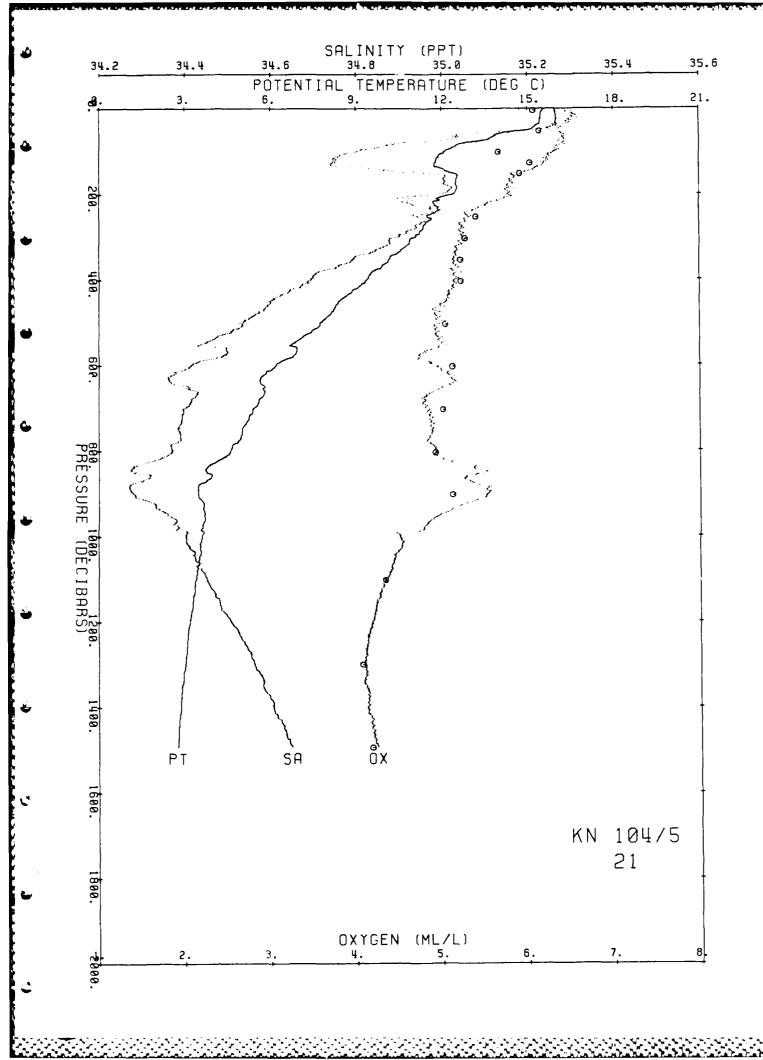
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1495 2.862

2.756 34.647 4.18 47.0 2.47 25.0







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905 3.618

3.020

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1004 3.334

1253

1497

3.774 34.263 5.46

3.553 34.319

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23.4

3.263 34.352 4.84 37.7 2.46 32.6

2.704 34.639 4.22 54.8 2.44 30.9

2.21 26.5

28.8 2.32 26.5

50.0 2.56 31.6

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27.289 31.904 36.414 40.823 45.133

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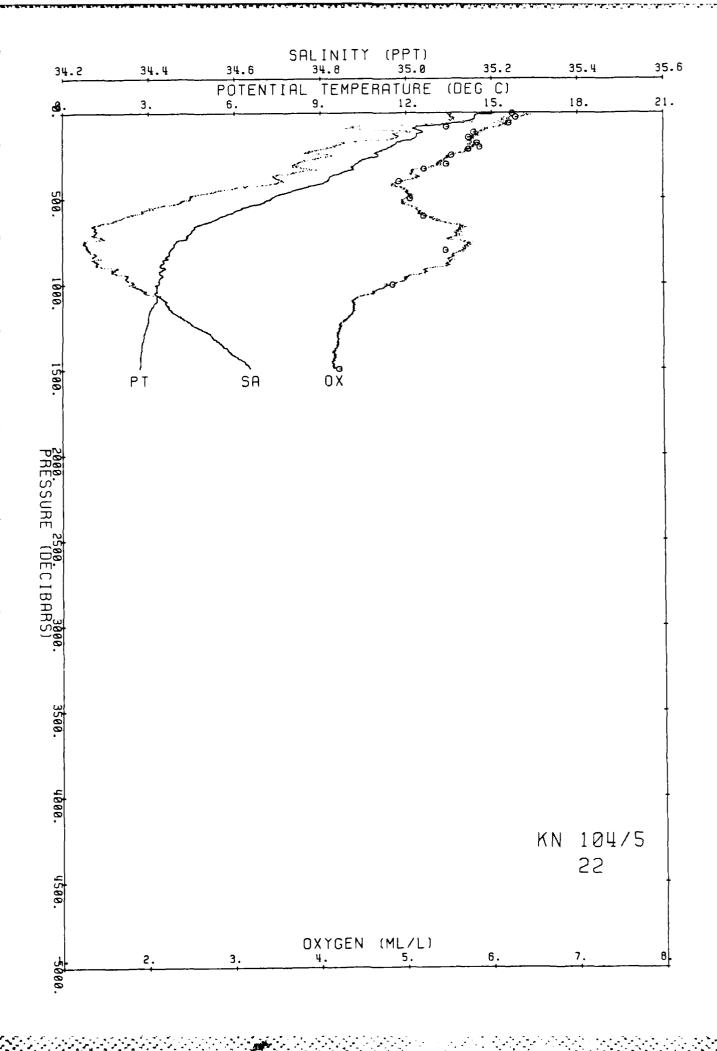
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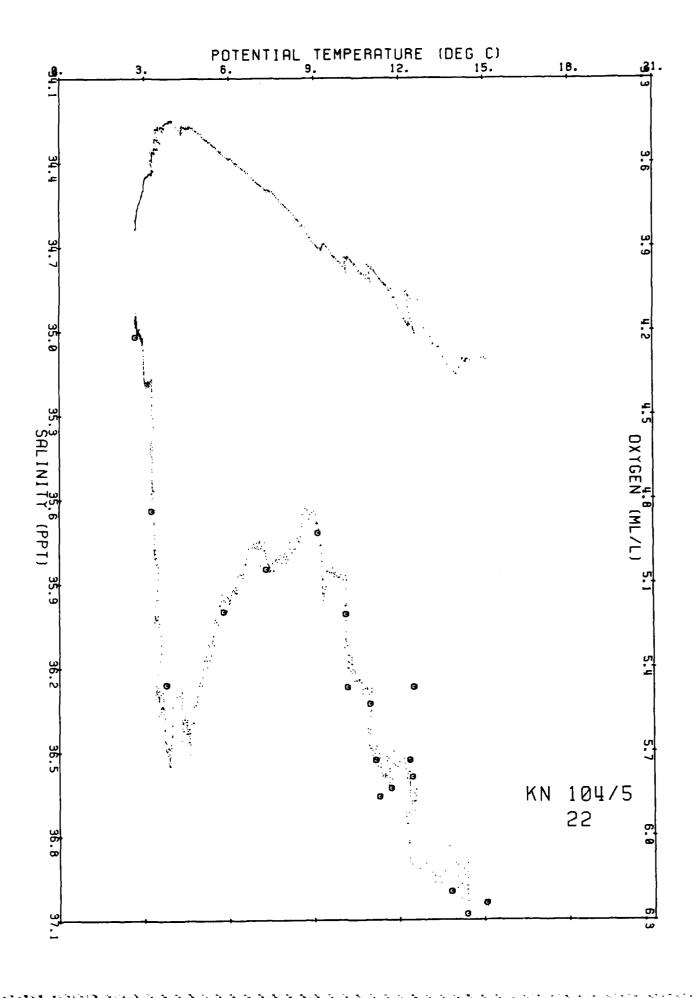
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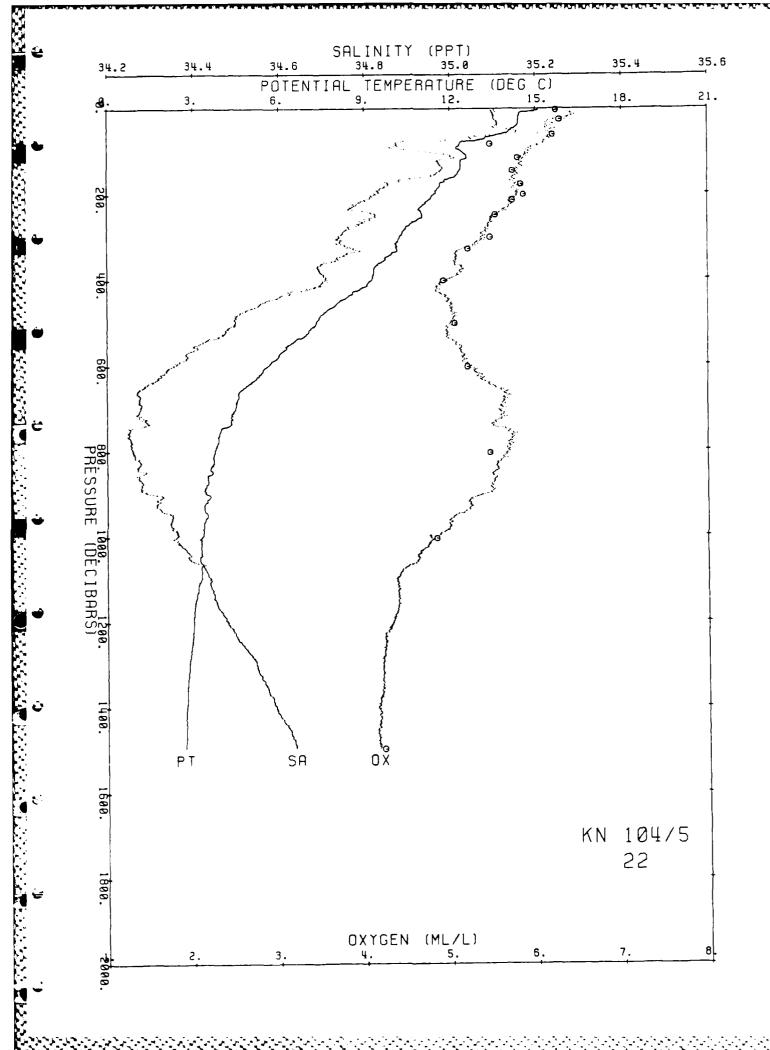
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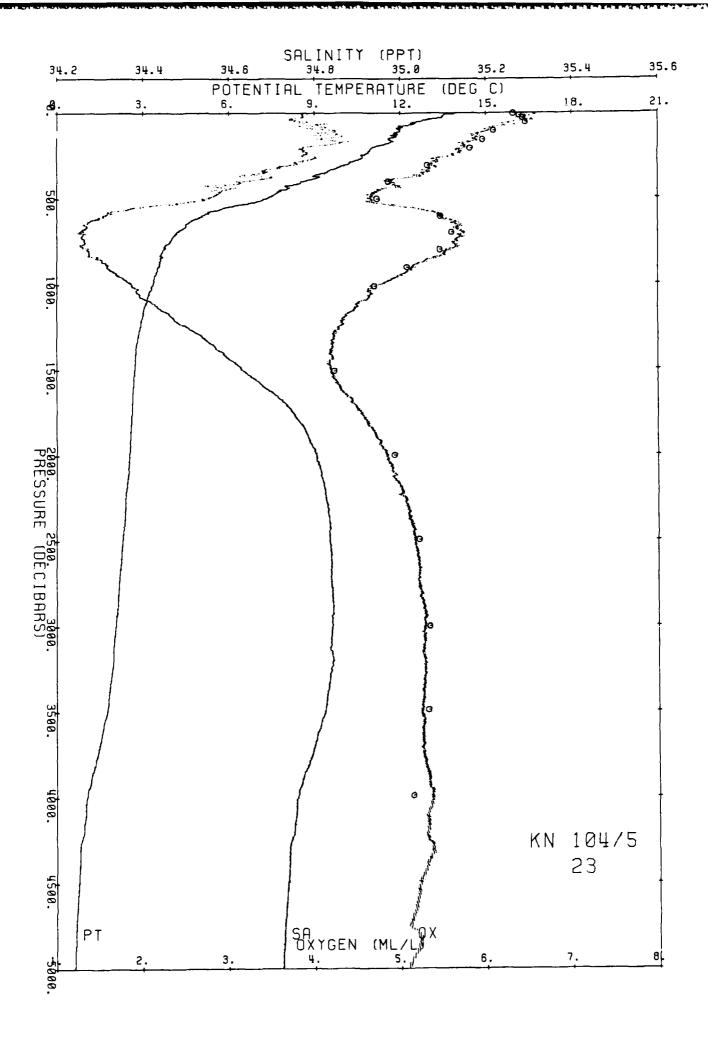


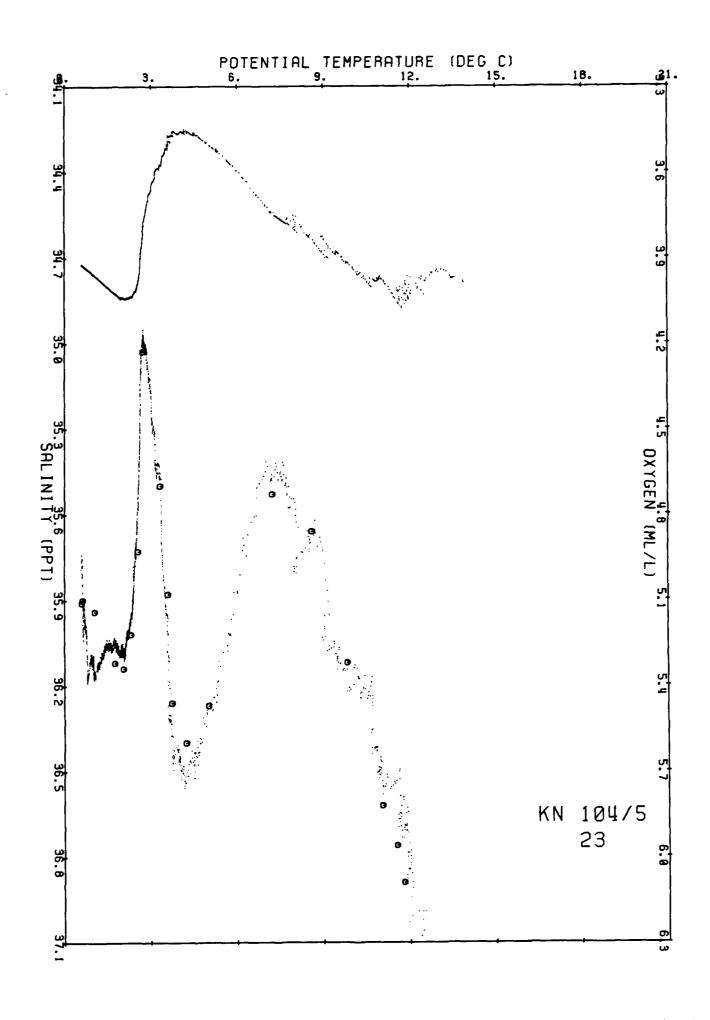
POSSESSION - RECORDED PROPERTY POSSES

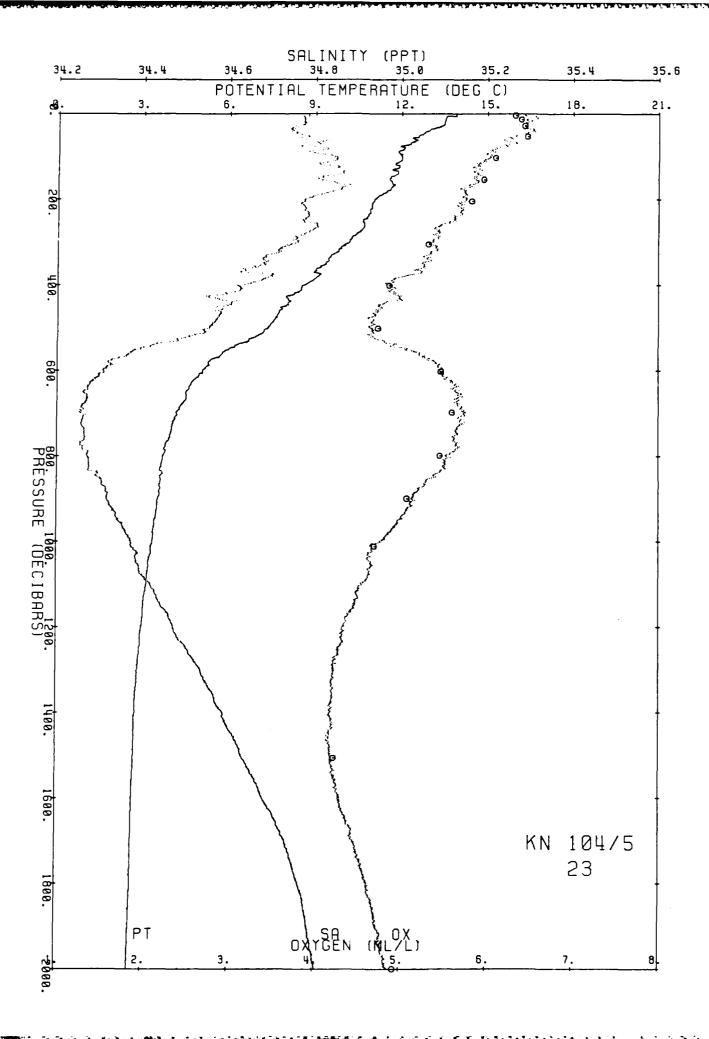




7.4	PE	TE	PT	SA	οx	os	so	51	S 2	83	S4	AN	ΗZ	87	DE	
1.				34.783											0.0	
1.				34.772											10.0	
1.4	20	13.488	13 485	34.772	6.4	109.8	26.118	30.504	34.793	38.988	43.090	189.0	0 .0	4 1.89	19.9	
D / .	30	13.321	13.317	34.748	6.4	107.8	26.134	30.524	34.816	39.013	43.119	187	8 0	6 2 23	29.9	
<u> </u>	40	12.961	12.956	34.748	6.5	110.1	26.207	30.604	34.902	39.107	43.219	181.	1 .0	8 4.79	39.9	
2				34.773										9 5.18	49.8	
				34.777										1 3.58	59 8	
. .				34.810											69 7	
<i>.</i>				34.817											79.7	
				34.791											89.6	
				34.844											99.6	
				34.818 34.864											119.5	
				34.845											139 4 159 3	
1.				34.844											179.3	
				34.776											199.1	
T.				34.778											219.0	
F				34.783											238.9	
				34.803											258.8	
ł				34.774											278.7	
١.				34.760										7 2.31	298.6	
ı	320	9.847	9.810	34.720	5.4	85.3	26.766	31.227	35.589	39.854	44 024	134.	2 .5	0 2 47	318.5	
	340	9 505	9.467	34.679	5.3	82.9	26.791	31.260	35.629	39.902	44.079	132	0.5	3 2 09	338.4	
1	360			34.653											358.3	
I.	380	9 122		34.700											378 . 1	
	400			34.619											398.0	
	450			34.572											447 7	
	500	7.384		34.553											497.4	
	550			34.394						40.424					547.0	
	600 650	5.139 4.554		34.309 34.261						40.535					596 7 646 3	
	700			34.257						40.666					695 9	
	750			34.264											745.5	
	800			34.271						40.759			3 .7 4 1.0		795.1	
1.	900	3.602		34.317						40.825			0 1.1		894 2	
سنا	1000	3.435		34.374						40.899			6 1.1		993 3	
[4	1100			34.420						40.970			6 1.2		1092.3	
H	1200			34.472									5 1.3		1191 3	
	1 300			34.537									8 1.4		1290 2	
.	1 400		2.775	34.589	4.2	55.8	27.577	32.210	36.739	41.166	45 . 492	59	9 1.4	6 1.24	1389.1	
	1500			34.630						41.206			9 1.5		1487.9	
100	1600			34.681						41.254			3 1.5		1586.7	
	1700	2.762		34.734						41.301			7 1.6		1685.4	
	1800									41.328			9 1.6		1784.1	
Ţ.,	1900	2.719		34.787									5 1.7		1882.7	
	2000			34.805									3 1.7		1981.3	
	3100			34.815									91.8		2079.8	
-77	2200 2300	2.596		34.823 34.830						41.404			0 1.8 6 1 9		2178.3	
1	2400	2.547		34.836						41.425			6 1.9 4 1.9		2276.7	
	2500	2.494								41.436			2 1.9		2473.5	
1.4	2600	2.458		34.839									0 2.0		2571.8	
K .7	2700	2.414		34.839						41.454			9 2.0		2670.0	
	2800	2.384								41.462			9 2.1		2768.2	
	1900	2.348		34.842						41.470			8 2.1		2866.4	
	3000	2.293		34.841						41.479			5 2.2		2964.5	
	3200	2.237		34.843						41.493			5 2.2		3160.7	
×	3400	2.091		34.829	5.3	68.9	27.849	32.506	37.059	41.508	45.857	42.	1 2.3		3356.6	
	3600	1.904		34.811									3 2.4		3552 4	
	3800	1.651		34.787						41.550			8 2.5		3747.9	
	4000									41.575					3943.4	
	4200	1.278								41.583			5 2.6		4138.6	
	4400			34.738											4333.7	
		1.102		34.733											4528 6	
·		1.067		34.729											4723.3 4917 A	
-	5167			34.727											4917.8 5080.2	
	374,		. 379	34.744	4.7	33.0	4 . 446	Jat	37.140	47.917	43.773	٠, د	٠.٠		JUBU . 2	
	PR	TE	PT	SA	02	SI	PQ	N3 :	N2 NH	4 SO	S1		\$2	83	S4	DE
				34.628										38.951 4		4.0
				34.798			0.45							38.981 4		
				34.794			0.47							39.008		28.2
[34.768			0.50							39.219 4		52.9
				34.792			0.64							39.437 4		
(154	11 551	11 531	34 818	5 . 96	4.8	0.71	8.6 0	.02	26 . 5	37 30.9	61 35	. 287	39.517	13.655	152.7
Γ 🦠	205	11 057	11 032	34 779	5.82	6.1	0.87	9.0 0	.01	26 . 5	98 31.0	33 35	. 369	39.610 4	13.756	203.0
				34.725			1.17		.01					39.857		
r	401			34 645			1.54							40.073 4		
	502			34.545			1.81							40.290		
				34 306			2.00							40.547 4		
	698 799	4 276		34 260 34 265			2.11							40.658 4		
	900			34 317			2.34							40.749 4 40.815 4		
	1011			34 376			2.48							40.907		
				34 638										41.214		
				34 806			2.05							41.370		
				34.843										41 440		
· •				34 845										41 484		
X*.				34.828			1.99							41.519		
Уú				34.762										41.576		
λŸ				34.739			2.34							41 601		
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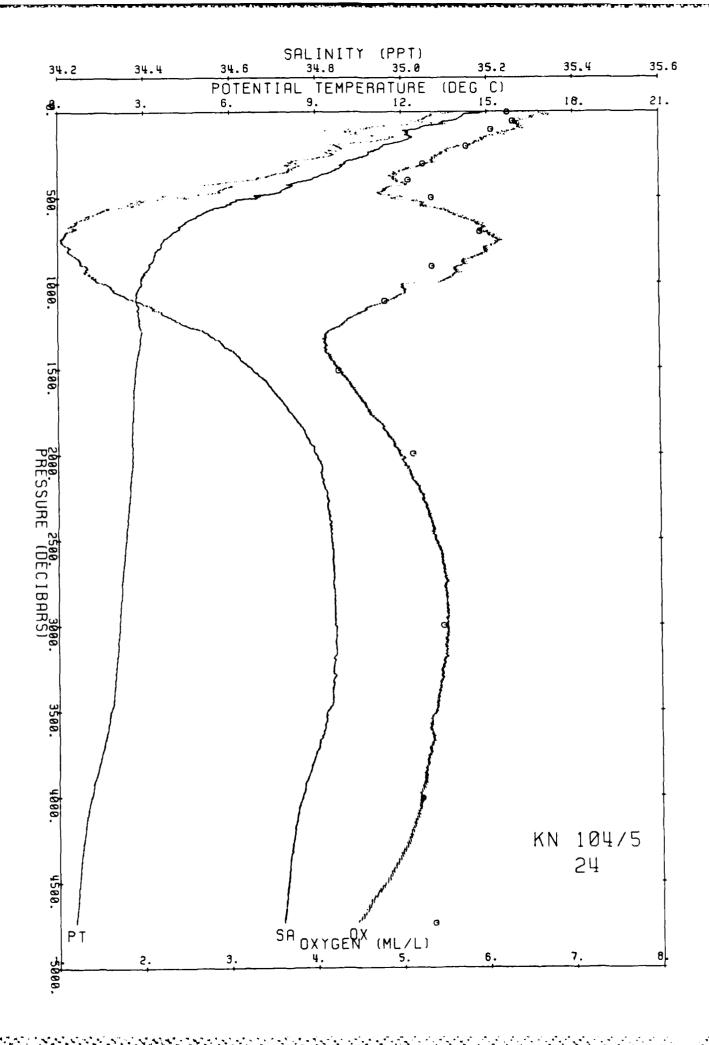


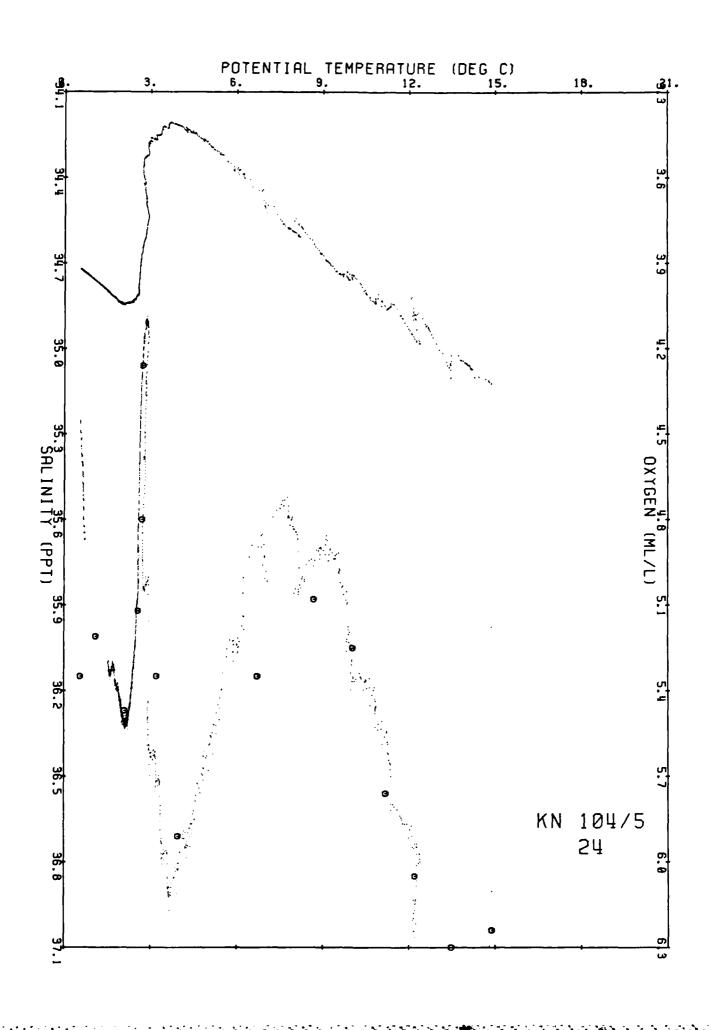


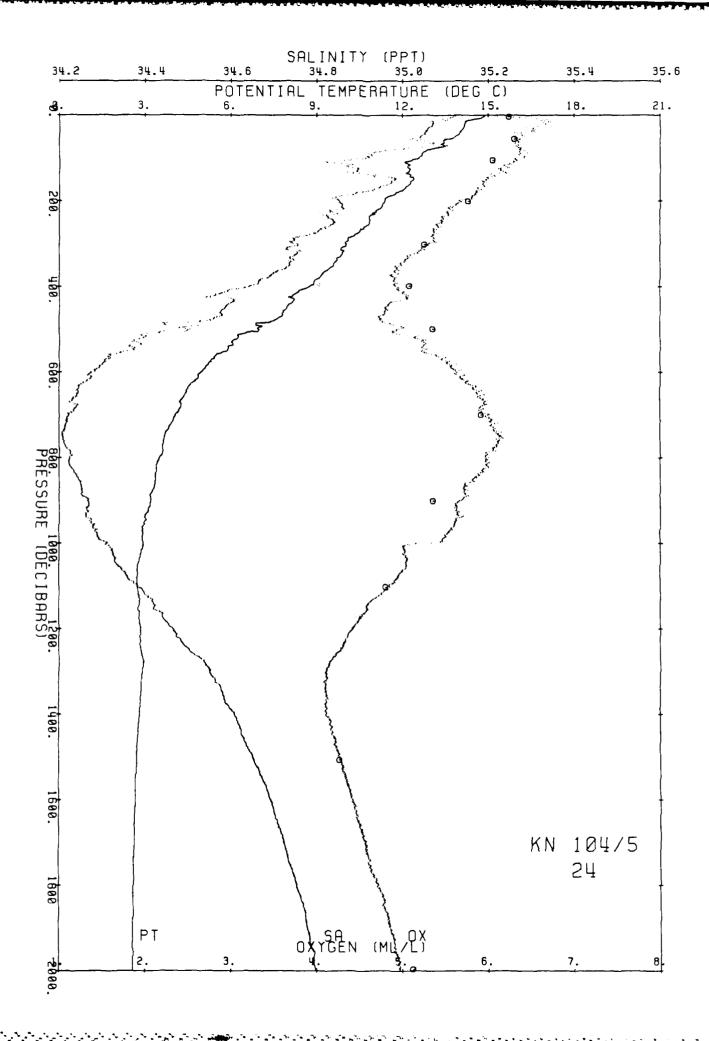


6.7 115.4 26.203 30.574 34.848 39.028 43.117 181.0 6.5 112.7 26.209 30.581 34.856 39.037 43.127 180.8 30 14.124 14.120 35.060 1.35 40 14.016 14.011 35.052 6.4 110.0 26.226 30.600 34.877 39.060 43.152 179.5 50 13.861 13.854 35.041 6.4 110.7 26.250 30.627 34.908 39.094 43.188 177.4 .09 2.77 49.8 60 13.458 13.450 35.051 6.3 108.1 26.342 30.726 35.014 39.207 43.309 169.0 .11 6.3 108.3 26.377 30.761 35.048 39.240 43.341 165.9 6.4 107.3 26.386 30.781 35.078 39.280 43.390 165.3 70 13.482 13.473 35.103 3.33 80 12.978 12.968 34.982 .14 1.74 90 12.690 12.678 34.924 6.4 106.8 26.399 30.799 35.102 39.310 43.426 164.4 100 12.596 12 583 34.913 6.4 107.4 26.409 30.812 35.116 39.326 43.444 163.6 1 81 99 6 6.2 102.8 26.458 30.869 35.182 39.400 43.525 159.4 120 12.186 12.171 34.873 6.1 100.8 26.483 30.892 35.202 39.418 43.541 157.7 5.9 98.9 26.517 30.925 35.236 39.451 43.574 155.0 140 12.294 12.276 34.931 139.4 160 12.284 12.263 34.971 . 27 2.29 159.3 180 11.831 11.808 34.893 5.9 96.5 26.543 30.961 35.281 39.506 43.637 152.9 5.7 92.3 26.592 31.019 35.348 39.582 43.721 148.6 5.6 90.3 26.627 31.059 35.392 39.629 43.773 145.7 200 11.400 11.375 34.852 . 33 2.82 199.1 11.195 11.168 34.848 2.37 219.0 240 10.883 10.854 34.827 5.5 88.2 26.668 31.106 35.445 39.689 43.839 142.2 2.57 238 9 5.5 87.5 26.704 31.146 35.490 39.737 43.891 139.2 260 10.690 10.659 34.829 . 42 2.42 258.8 280 10.371 10.338 34.775 300 10.057 10.022 34.752 85.3 26.718 31.168 35.518 39.772 43.932 138.1 5.3 84.0 26.755 31.211 35.568 39.829 43.995 134.9 2.46 298.6 9.940 9.903 34.755 5.2 81.7 26.778 31.236 35.596 39.859 44.028 133.2 318.5 340 9.714 9.675 34.739 5.0 79.1 26.804 31.267 35.632 39.900 44.073 131.0 77.1 26.833 31.302 35.673 39.946 44.125 128.5 . 53 2.0B 338.4 9.406 34.719 360 9.446 4.9 . 55 2.21 358.3 380 9.140 9.099 34.688 4.9 76.3 26.858 31.335 35.712 39.992 44.177 126.3 4.9 76.0 26.878 31.363 35.748 40.036 44.228 124.5 400 8.795 8.752 34.643 . 60 1.90 398.0 7.989 7.944 34.586 72.3 26.957 31.461 35.864 40.169 44.378 117.2 450 4.8 2.33 500 7.034 7.007 34.506 4.9 72.8 27.029 31.555 35.980 40.306 44.536 110.4 5.2 75.1 27.072 31.626 36.078 40.431 44.686 105.7 2.27 497.4 5.890 34.374 550 5.938 1.90 547.0 5.037 4.989 34.273 79.1 27.100 31.678 36.152 40.527 44.803 102.4 600 650 4.466 4.417 34.243 5.9 81.3 27.140 31.732 36.222 40.610 44.900 98.3 .88 1.75 646.3 4.111 6.0 82.4 27.161 31.763 36.261 40.659 44.957 4.060 34.222 96.2 700 1.31 6.1 83.6 27.187 31.799 36.307 40.713 45.020 6.0 81.3 27.219 31.835 36.347 40.758 45.070 . 97 750 3.746 3.693 34.208 93.5 745.5 3.565 3.509 34.225 90.6 1.02 800 1.48 795.1 900 3.267 3.205 34.266 5.7 76.5 27.280 31.904 36.424 40.843 45.161 85.0 1.11 5.2 69.0 27.341 31.971 36.498 40.922 45.247 1000 3.014 2.946 34.312 79.5 1.19 1.44 993.3 2.745 34.382 64.5 27.415 32.050 36.581 41.011 45.339 72.8 1.26 1.57 1092.3 1100 2.819 4.8 4.1 55.1 27.534 32.104 36.632 41.058 45.384 4.1 55.0 27.538 32.164 36.689 41.112 45.436 4.1 55.0 27.589 32.220 36 347 37 1.29 1191.3 1200 2.921 2.839 34.464 4.4 58.9 27.472 32.104 36.632 41.058 45.384 68.4 1.33 2.917 34.551 3.008 1300 63.6 1.40 1.35 1290.2 4.1 55.0 27.589 32.220 36.747 41.173 45.498 4.3 56.9 27.632 32.266 36.796 41.224 45.552 1400 2.926 2.827 34.609 1500 2.820 2.714 34.651 55.3 1.52 1.22 1487.9 2.666 34.693 4.4 58.9 27.670 32.305 36.836 41.265 45.593 1600 2.780 52.3 1.57 1.10 1586.7 .94 1685.4 1700 2.751 2.629 34.723 4.6 60.8 27.697 32.333 36.865 41.294 45.623 50.4 1.62 2.608 34.754 62.8 27.724 32.360 36.892 41.322 45.651 2.739 1800 48.5 1.67 .92 1784.1 4.7 2.724 2.585 34.779 4.9 64.7 27.746 32.382 36.915 41.345 45.675 47.1 1.72 1900 2000 2.737 2.589 34.798 5.0 66.3 27.761 32.397 36.929 41.359 45.688 46.5 1.77 .67 1981.3 2.716 2.559 34.812 67.9 27.775 32.412 36.944 41.375 45.705 45.8 1.81 .69 2079.8 2100 5.1 2.500 34.820 2.457 34.826 5.2 69.1 27.786 32.425 36.959 41.392 45.722 5.3 70.3 27.795 32.434 36.970 41.403 45.735 45.1 1.86 44.7 1.90 2200 2.665 .68 2178.3 2300 2.630 .58 2276.7 2.593 2.410 34.834 71.0 27.805 32.446 36.982 41.416 45.750 44.2 1.95 2400 2500 2.558 2.366 34.836 5.4 71.3 27.810 32.452 36.990 41.425 45.760 44.1 1.99 .50 2473.5 72.1 27.819 32.463 37.002 41.439 45.776 2600 2.495 2.296 34.839 5.4 43.6 2.04 2.245 34.840 2.196 34.840 5.5 72.6 27.824 32.469 37.010 41.448 45.786 5.5 72.7 27.828 32.474 37.017 41.456 45.795 2700 2.454 43.4 2.08 .51 2670.0 .49 2768.3 2500 2.414 43.4 2.12 2900 2.382 2.155 34.842 5.5 72.9 27.833 32.481 37.024 41.464 45.804 43.3 2.17 2.114 34.841 2.017 34.841 3000 2.350 5.5 72.6 27.835 32.484 37.029 41.470 45.811 43.3 2.21 43 2964 5 2.272 5.5 72.1 27.843 32.495 37.042 41.486 45.829 43.1 2.30 .50 3160.7 3200 3400 2.182 1.908 34.835 5.4 71.0 27.847 32.502 37.057 41.499 45.845 43.1 2.38 46 3356.6 5.3 69.3 27.649 32.509 37.06; 41.518 45.870 3600 1.990 1.700 34.817 42.2 2.47 .58 3552.4 68.6 27.849 32.518 37.082 41.543 45.902 1.710 1.407 34.790 3800 4000 1.437 1.119 34.763 5.2 67.2 27.847 32.525 37.097 41.566 45.933 38.7 2.63 .68 3943.4 1.227 .893 34.746 65.4 27.849 32.533 37.112 41.587 45.960 37.0 2.71 4200 5.1 .65 4138.6 .746 34.734 .651 34.727 4.9 62.6 27.848 32.537 37.120 41.599 45.976 4.6 58.8 27.849 32.540 37.126 41.608 45.988 36.1 2.78 35.7 2.85 4400 1.098 .52 4333.7 4600 1.023 44 4528.6 .564 34.720 4.5 56.7 27.848 32.542 37.131 41.615 45.997 35.2 2.90 4735 . 949

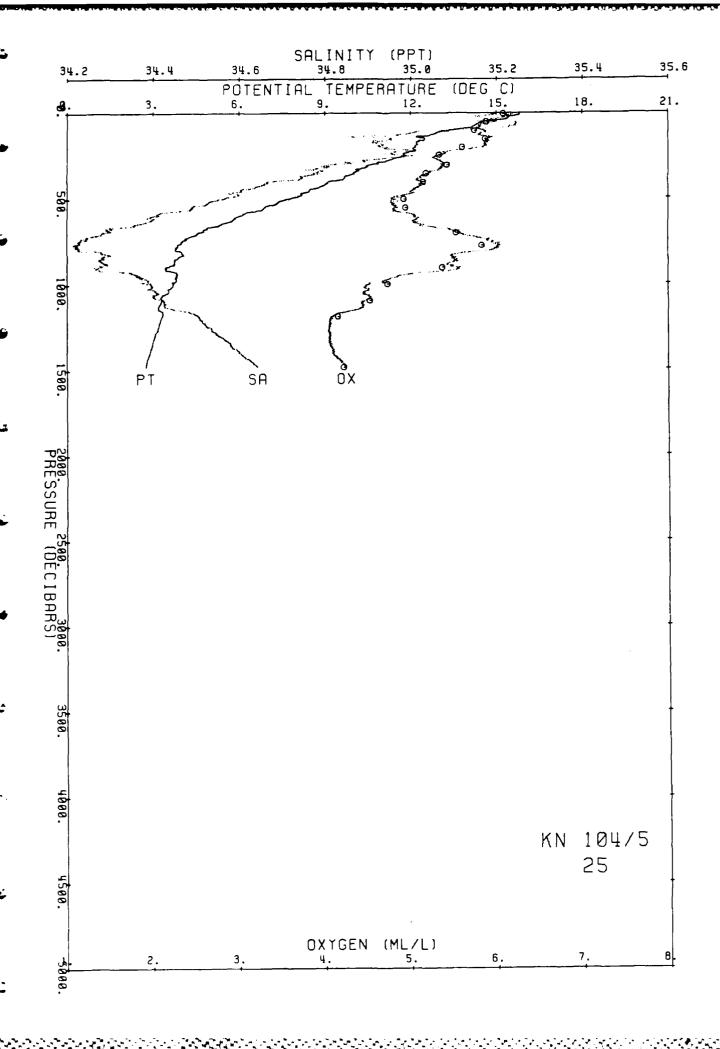
TE 02 SI 83 4 14.878 14.877 35.136 6.24 3.6 0.40 2.2 0.06 0.20 26.105 30.462 34.723 38.891 42.967 14 14.428 14.426 35.123 30 14.231 14.227 35.106 4.5 0.37 2.2 0.08 4.8 0.36 2.8 0.08 26.192 30.558 34.827 39.003 43.087 26.222 30.591 34.864 39.044 43.131 29.8 3.8 0.45 4.1 0.17 4.9 0.61 7.0 0.27 4.5 0.66 8.8 0.03 55 13.485 13.477 35.115 6.30 105 12.217 12.203 34.901 6.05 26.474 30.884 35.196 39.413 43.538 26.519 30.927 35.237 39.453 43.575 104 4 151 12.295 12.275 34.977 149.5 201 11.216 11.191 34.818 5.76 5.5 0.85 10.3 0.02 26.600 31.031 35.364 39.601 43.744 199 7 252 10.848 10.817 34.834 6.9 0.99 13.8 0.01 26.680 31.119 35.459 39.703 43.653 250.2 302 10.081 10.046 34,764 5.25 26.760 31.216 35.573 39.833 43.998 8.702 34.637 5.08 6.726 34.428 5.35 9.7 1.44 21.6 398 8.745 26.881 31.368 35.754 40.042 44.235 394.1 27.006 31.539 35.971 40.304 44.541 499 11.7 1.75 26.2 5.101 34.290 3.956 34.218 5.91 27.101 31.675 36.147 40.519 44 792 27.169 31.773 36.274 40.674 44.975 5.150 13.1 1.98 22.5 600 700 17.5 2.08 31.2 4.007 693.6 3.457 34.224 27.223 31.840 36.354 40.767 45.079 801 3.214 34.276 5.35 2.717 34.369 4.80 901 3.276 29.0 2.34 33.6 27.288 31.911 36.431 40.849 45.167 892.0 1103 2.791 40.5 2.52 35.1 27.407 32.043 36.575 41.005 45.335 1091.5 1507 2.835 2.728 34.650 4.26 55.6 2.46 35.2 27.630 32.264 36.793 41.221 45.548 1490.1 1996 2.709 2.561 34.792 5.12 45.0 2.09 28.0 27.759 32.395 36.928 41.359 45.689 1971.9 27.816 32.458 36.996 41.431 45.766 2468. 2502 2.551 3002 2 342 2.106 34.847 5.47 39.6 1.87 23.1 27.841 32.490 37.035 41.476 45.818 2958.4 3506 2.058 1.776 34.830 39.9 27.853 32.512 37.065 41.516 45.866 3450.9 1.97 18.5 4011 1.417 1.099 34.768 5.21 78.0 2.18 32.6 0.664 34.732 74.4 2,36 44.7 27.853 32.531 37.104 41.573 45.941 3943.8 4562 1.032 27.852 32.543 37.128 41.610 45.989 4479.7 0.562 34.722 5.35 75.4 2.36 45.3 27.850 32.544 37.133 41.617 45.999 4652.7

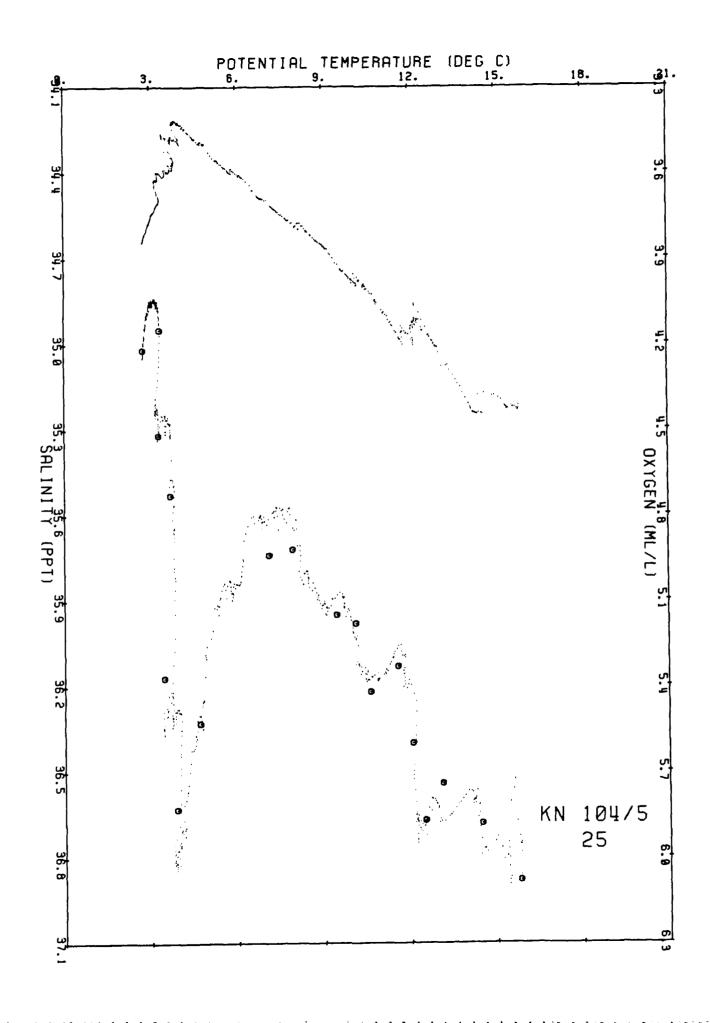


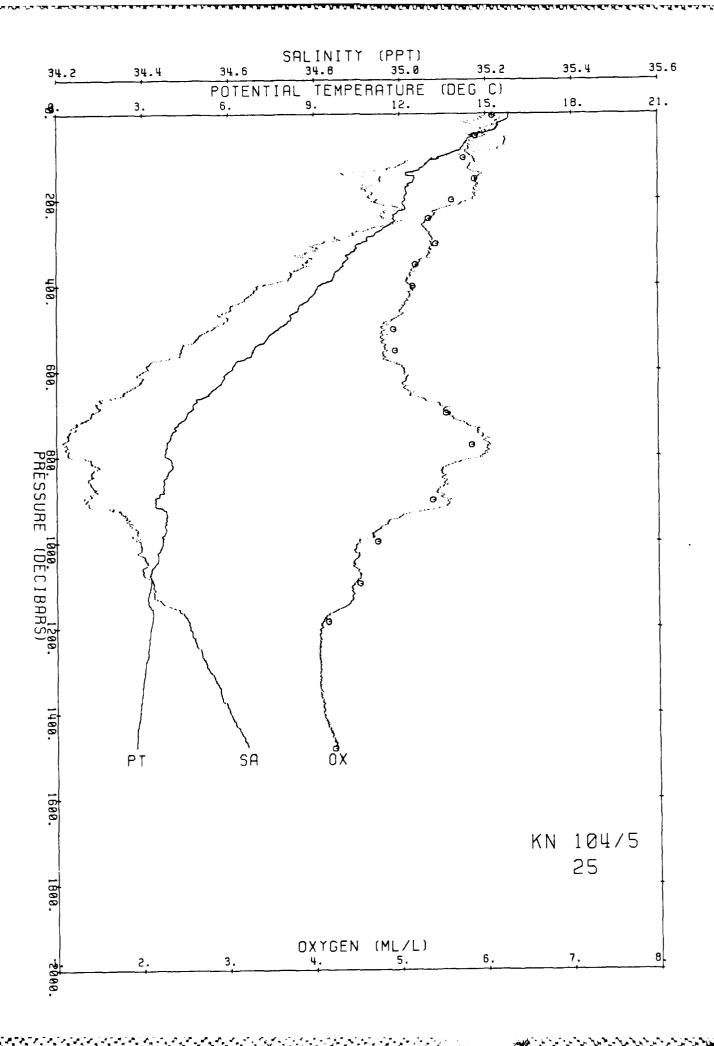




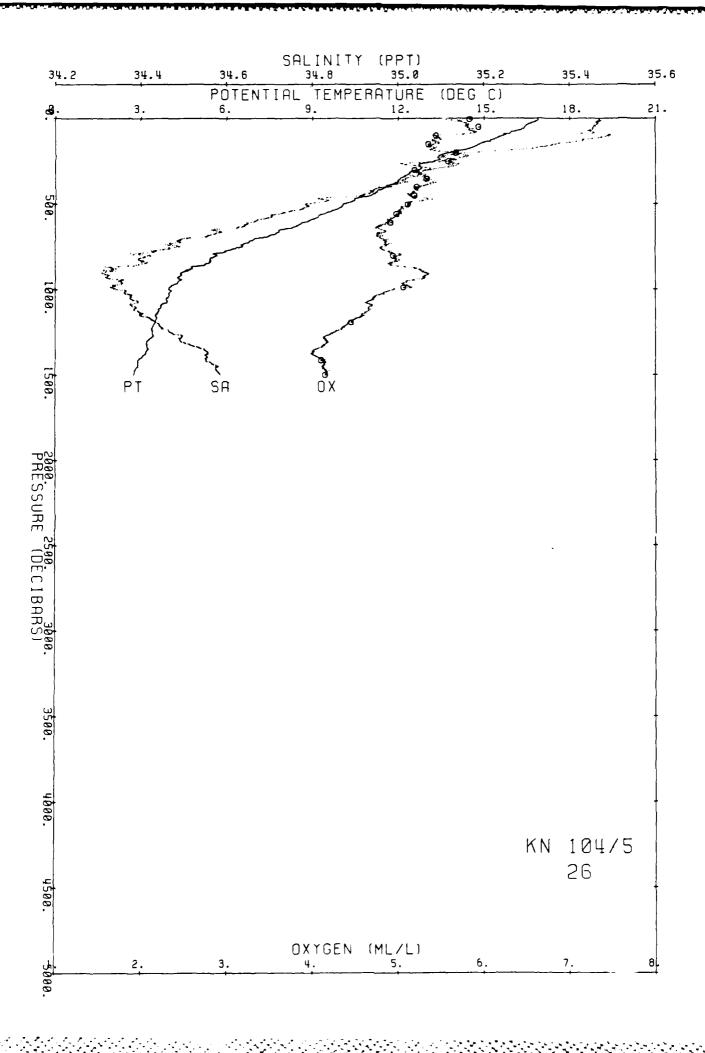
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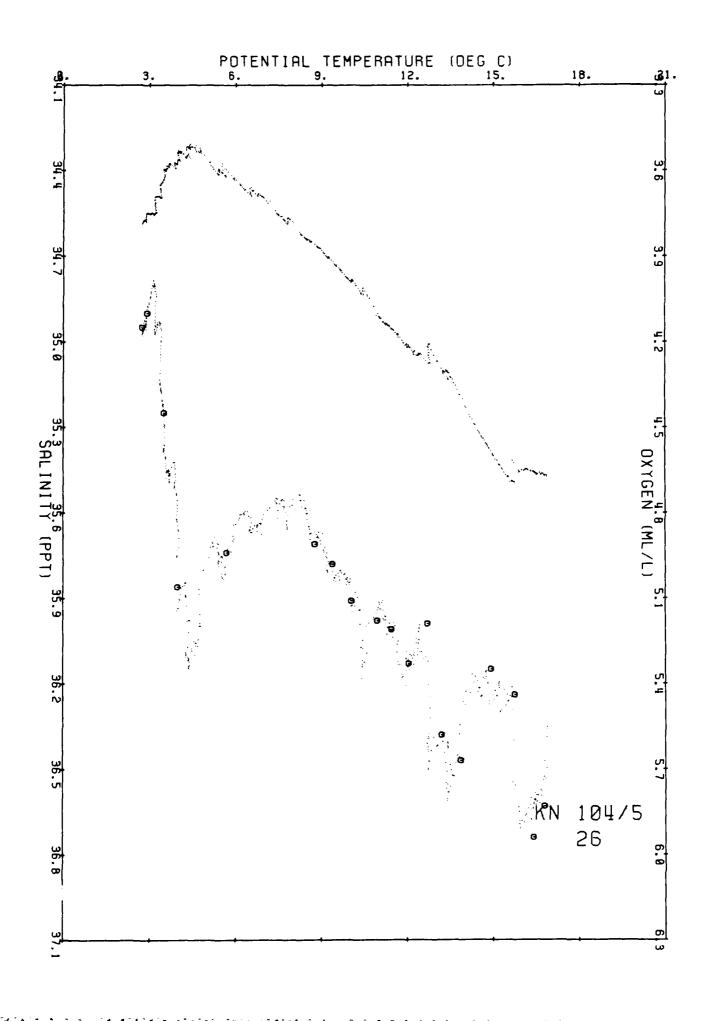


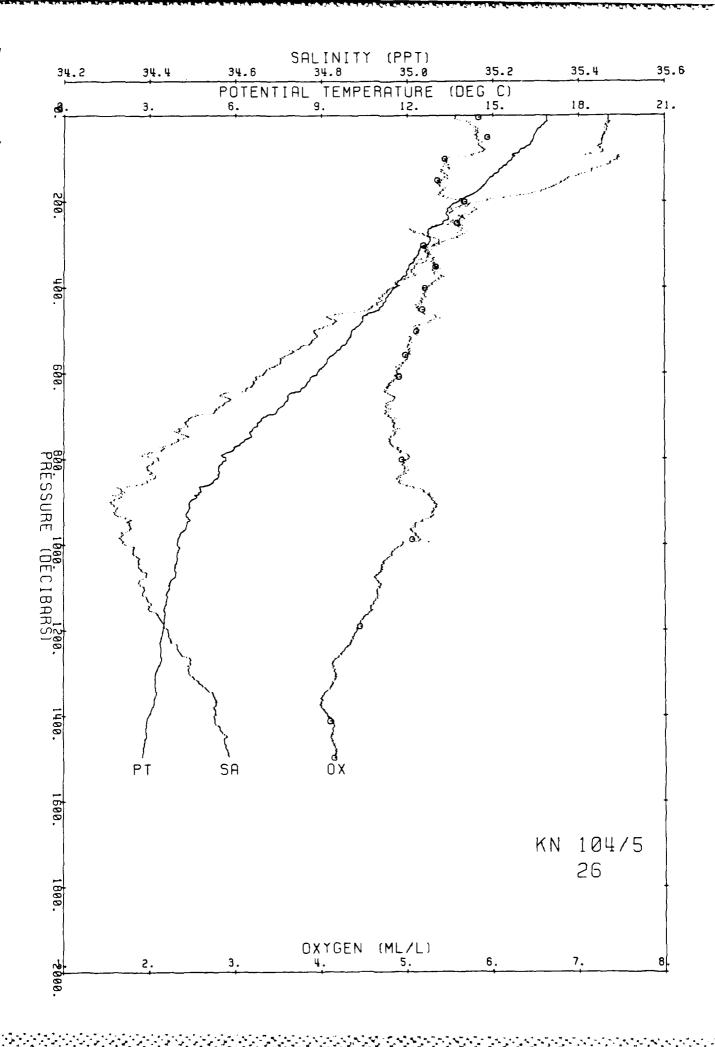


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0	16.882	16.882	35.469	5.6	101.7	25.903	30.223	34	448	38 580	42.623	208.9	0.00	0.00	0.0	
10	16.986	16.884	35.469	5.6	102.3	25.903	30.223	34	447	38.579	42.622	209.3	02	- 42	10.0	
20	16.792	16.789	35.468								42.650		.04	2.62	19.9	
30	16.632	16.627	35.460	5.8	106.0	25.957	30.281	. 34	. 510	38 646	42.693	204.8	.06	3.18	29.9	
40	16.507	16.501	35.461	5.8	105.8	25.987	30.314	34	. 545	38 683	42.732	202.3	.08	3.09	39.9	
50	16 448	16.440	35.457								42.747		.10	1.86	49.8	
		16.404									42.757		. 1 2	1.55	59.8	
		16.239									42.802		. 1.4	3.26	69.7	
		15.948									42.893		. 16	4.76	79.7	
		15.738									42.932		.18	2.80	89.7	
		15.674		5.4							43.000		. 20	4 50	99.6	
		15.342		5.4							43.065		. 24	2.57	119 5	
		14.753		5.5 5.4							43.145		. 27	2.40 1.93	139.5	
		14.389		5.4							43.224			2.19	159.4 179.3	
		13.837		5.7							43.301			2.41	199.2	
		13.410		5.8							43 359			2 03	219.1	
		13.445		5.6							43.371			1.53	239 0	
		12.957		5.6							43 444			2.42	258 9	
		12.758		5.6							43.496			2.47	278.8	
300	12 784	12.743	35.077	5.3							43.523			2.03	298.7	
320	12.458	12.415	35.047	5.2	87.6	26.546	30.951	. 35	. 258	39.470	43.590	156.8	. 58	2.61	318.5	
		12.236		5.3							43.635			2.27	338.5	
		12.002		5.3							43.673			1 79	358.4	
		11.828		5.4							43.709			1.92	378.2	
		11.600		5.2							43.749			1.93	398.1	
		11.042		5.1 5.1							43.855			2.03	447.8	
550	9.594		34.737	5.0							44.107			1.99	547.2	
600	8.937		34.668	4.9							44.218			1.97	596.8	
650	7 937		34.567	4.8							44.381			2.36	646.5	
700	7 144	7.076	34.507	4.8							44.521			2.23	696.1	
750	6.573		34.483	4.8							44 632			2.07	745.7	
800	5.742		34.420	5.0							44.768			2 13	795.3	
900	4.484		34.308	5.3							44.950		1.30	1.62	894.4	
1000 1100	4.063		34.346 34.387	4.9 4.7							45.066 45.155		1.40	1.63	993.5	
1200	3.549		34.441	4.4							45 245		1.48		1092.5	
1300	3.316		34.491	4.2							45.330		1.64		1290.5	
1400	3.072		34.551	4.1							45.425		1.71		1389.3	
1497	2.862	2.756	34.586	4.2	55.7	27.577	32.210	36	. 739	41.167	45.494	60.6	1.77	1.33	1485.2	
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PR	TE	PT	SA	02	SI	PO	N3	N 2	NH4		51		2	S 3	54	DE
		15.794		5.83	4.2	0.18		. 01			33 30.2					4.7
		16.794			4.8	0.18	1.2				32 30 2					12.2
		16.740		5 94	2.7 4.7	0.18	0.8 1.0 C	0.01			43 30.2 11 30.3					26.1 51.0
		15.752			5.4	0.35		0.04			95 30.5					100 6
		14.931			5.3	0.44		0.02		-	87 30.6					150 1
201	13.902	13.873	35.198	5.67	4.9	0.44	4.7	0.04			68 30.7					199.4
251	13.248	13.213	35.101	5.58	4.6	0.58	7.1	0.03		26 . 4	29 30.8	18 35	109 39	3.307	43.412	249.3
		12.716			5.3			0.01			07 30.9					299.5
		12.062			6.5						98 31.0					349.4
		11.467				0.96					56 31.0					
		10.902				1.19					98 31.1 80 31.2					
		9.399			8.4						42 31.3					
		8.793			9.3	1.49					91 31 3					
		7.154			14.6	1.77					24 31.5					
		5.697	34.425	4.94	20.3	2.06	26.3		0.0		36 31.6					
	4.524		34.311		15.4		18.9				90 31.7					
		3.985			26.1		31.5		0.5		63 31.8					
		3.713			24.7						23 31.9					
	3.595 3.392		34.433 34.493		37.9	2.55 2.58			ο .		85 31.9° 53 32.0°					
1413		2.923							U .		34 32.1					
1499		2.749							0.1		79 32.2					



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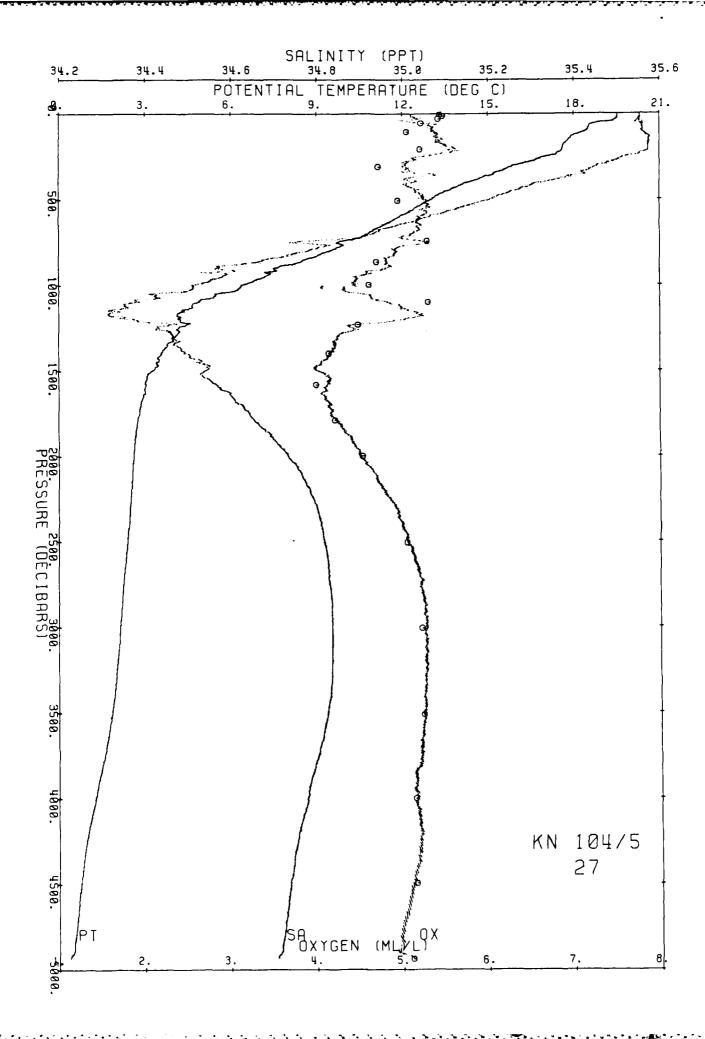




Cruise 1045 Station Cast Ship KN 27 1 DT 30.83 E 38 51.00 S 17 Start 844 83/11/23 a t 52.67 S End 38 17 30.48 E 1257 TE OX OS **S1** 51 53 HZ 0 19.536 19.536 35.555 98.4 25.308 29.584 33.766 37.857 41.859 265.5 0 00 5.1 0.00 0.0 10 19.536 19.535 35.555 98.4 25.309 29.584 33.766 37.857 41.860 265.8 99.0 25.313 29.589 33.771 37.862 41.865 265.8 20 19.526 19.522 35.556 5.1 .05 99.4 25.316 29.593 33.775 37.866 41.870 265.9 30 19.505 19.500 35.553 .08 1.07 40 19.384 19.377 35.553 5.0 95.9 25.348 29.626 33.811 37.904 41.909 263.2 98.1 25.432 29.716 33.906 38.005 42 015 255.6 3.16 50 19.035 19.026 35.545 5.1 5.16 49.9 18.653 18.642 35.562 5.4 101.9 25.543 29.833 34.029 38.133 42.148 245.4 5.3 100.4 25.565 29.856 34.054 38.159 42.176 243.7 5.4 101.4 25.569 29.861 34.058 38.164 42.182 243.7 . 18 70 18.558 18.546 35.559 2.63 80 18.543 18.529 35.559 1.15 . 21 5.3 101.0 25.578 29.871 34.069 38.175 42.193 243.2 5.3 100.8 25.590 29.883 34.082 38.189 42.208 242.4 90 18.511 18.496 35.560 100 18.464 18.446 35.559 1.91 99.7 120 18.205 18.185 35.567 4 101.6 25.662 29.959 34.162 38.273 42.295 236.3 140 17.918 17.894 35.577 160 17.823 17.796 35.574 5.4 100.9 25.741 30.043 34.251 38.366 42.393 229.5 5.4 100.6 25.763 30.067 34.276 38.393 42 421 228.1 35 3.55 139.5 . 39 1.87 159.5 180 17.698 17.667 35.575 .5 102.6 25.795 30.101 34.312 38.431 42.461 225.7 5.6 104.3 25.804 30.110 34.322 38.442 42.472 225.7 200 17.661 17.627 35.573 . 49 1.15 199.3 220 17.591 17.554 35.568 5.6 103.7 25.818 30.125 34.338 38.459 42.491 225.1 1.49 240 17.424 17.383 35.550 260 16.877 16.835 35.509 5.3 98.6 25.845 30.156 34,372 38.496 42.530 223.1 93.9 25.945 30.266 34.491 38.624 42.667 214.1 . 58 239.1 259.0 5.1 .62 4.01 280 16.467 16.422 35.489 92.1 26.027 30.355 34.587 38.726 42.776 206.9 90.6 26.113 30.449 34.689 38.837 42.894 199.2 90.4 26.167 30.509 34.754 38.906 42.968 194.5 300 15.996 15.949 35.458 5.0 70 3 71 298 A 320 15.711 15.661 35.444 2.97 318.7 5.1 340 15.370 15.317 35.418 360 15.095 15.040 35.397 5.0 89.3 26.225 30.572 34.824 38.982 43.050 189.6 5.4 95.0 26.270 30.623 34.879 39.042 43.115 185.8 3.05 338.6 .82 2.72 358.5 380 14.738 14.681 35.366 5.0 88.4 26.325 30.684 34.947 39.117 43.195 181.0 88.8 26.382 30.750 35.021 39.199 43.285 175.9 88.3 26.485 30.866 35.151 39.342 43.440 167.1 400 14.305 14.246 35.319 5.1 AQ 3.08 39A 3 450 13.594 13.530 35.257 5.2 2.60 448.0 5.3 89.3 26.550 30.942 35.237 39.437 43.546 161.9 1.06 5.2 87.6 26.611 31.015 35.321 39.533 43.652 157.0 1.14 500 13.077 13.008 35.204 550 12.499 12.425 35.133 2.05 547.4 600 12.001 11.922 35.064 85.9 26.654 31.069 35.386 39.607 43.735 1.21 650 11:391 11:307 34:988 700 10:900 10:813 34:930 5.2 84.9 26.711 31.138 35.467 39.701 43.841 148.9 1.29 5.1 82.1 26.755 31.194 35.533 39.777 43.927 145.3 1.36 2.01 646.7 1.80 696.4 750 9.785 9.697 34.738 9.557 9.465 34.777 5.3 83.2 26.799 31.262 35.626 39.894 44.066 140.6 1.44 1.97 77.1 26.868 31.336 35.705 39.977 44.154 134.8 1.50 72.0 27.003 31.517 35.930 40.244 44.463 120.4 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41.940 105 18.434 18.416 35.355 5.05 156 17.923 17.896 35.577 2.8 0.12 2.7 0.02 4.7 0.27 25,595 29,888 34,088 38,195 42,214 0.27 25.741 30.043 34.250 38.366 42.392 5.3 155 0 207 17.662 17.627 35.577 5.21 5.3 0.02 25.807 30.113 34.325 38.445 42.475 307 15.992 15.943 35.459 4.72 6.0 0.55 6.5 0.02 26.115 30.451 34.691 38.839 42.896 26.561 30.955 35.251 39.453 43.563 304 4 507 12 997 12.926 35.197 4.95 1.22 15.9 9.677 34.742 5.29 8.477 34.687 4.70 740 9.764 8.5 26.806 31.269 35.634 39.901 44.074 8.571 9.4 26.956 31.446 35.837 40.130 44.327 861 1.58 12.2 852.1 6.326 34.504 4.61 27.119 31.661 36.102 40.444 44 688 997 6.420 4.690 34.328 5.30 4.327 34.442 4.48 20.8 2.10 28.8 35.3 2.38 32.5 27.178 31.762 36.244 40.625 44 908 1085 2 27.308 31.901 36.391 40.780 45.070 1217.5 1096 4.780 4.426 1231 43.4 1398 3.669 3.562 34.496 4.14 2.54 31.1 27,430 32,042 36,551 40,959 45,267 1383.0 3.128 34.576 3.99 59.7 27.535 32.158 36.678 41.096 45 414 1564.2 1582 3.246 2.56 33.4 27.629 32.262 36.791 41.218 45 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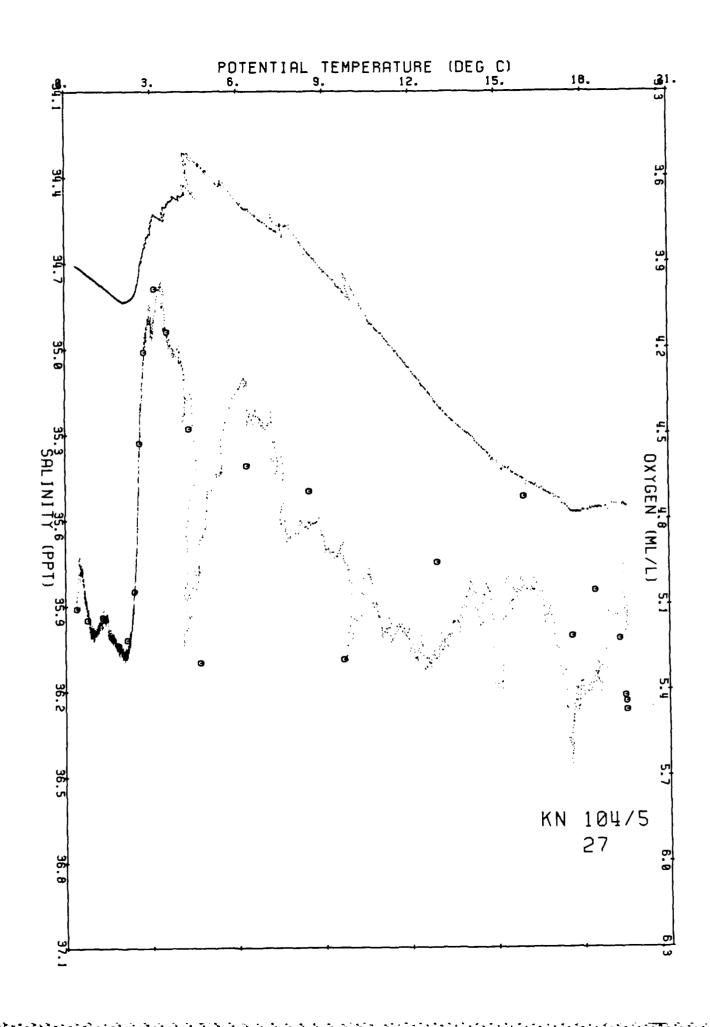
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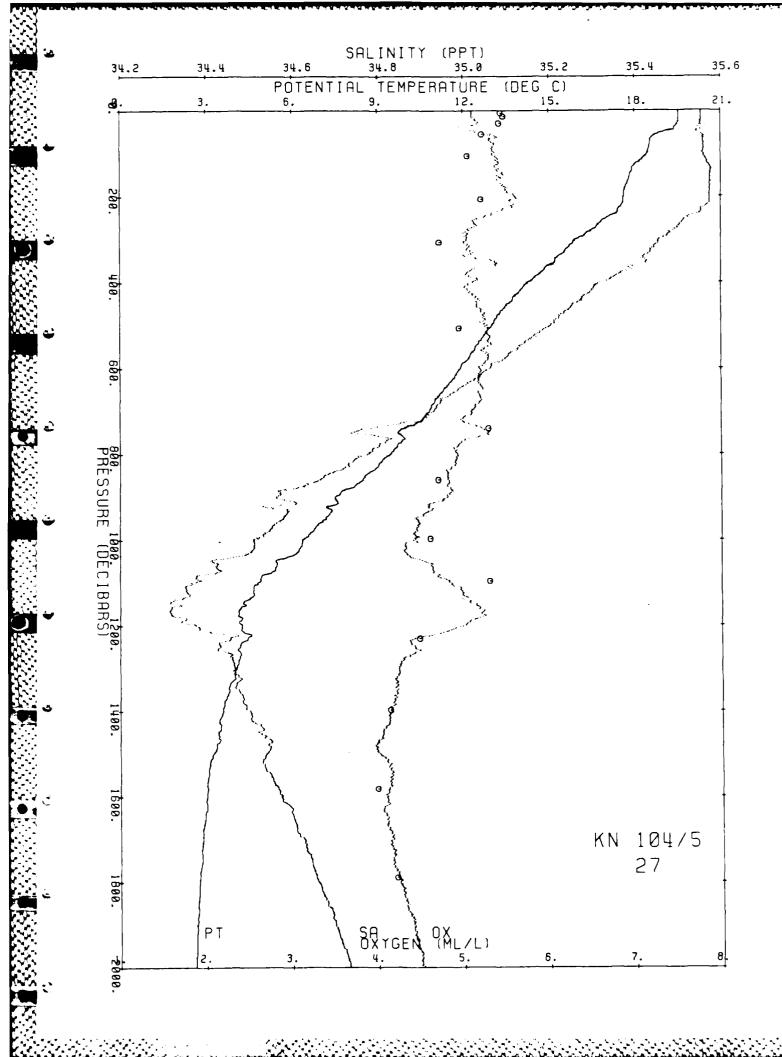
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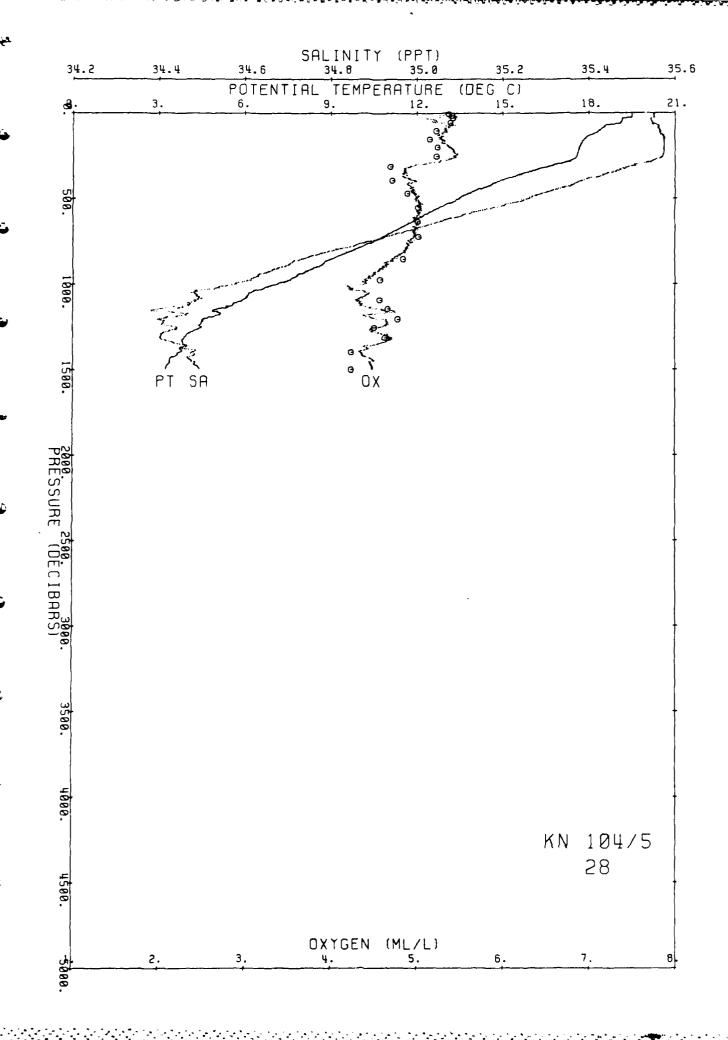
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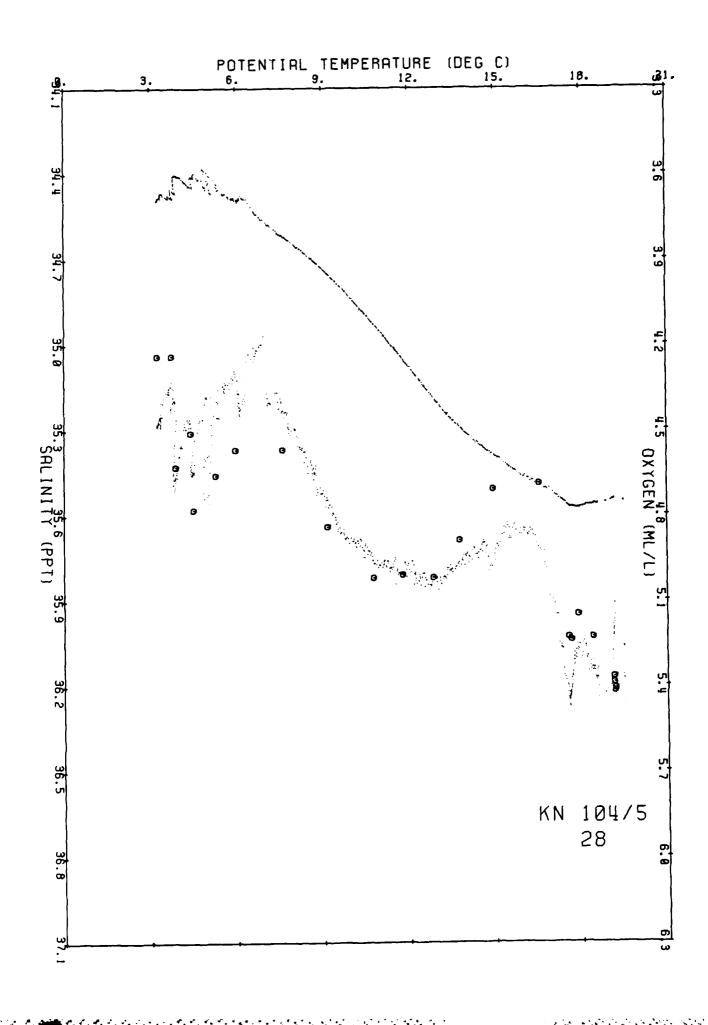


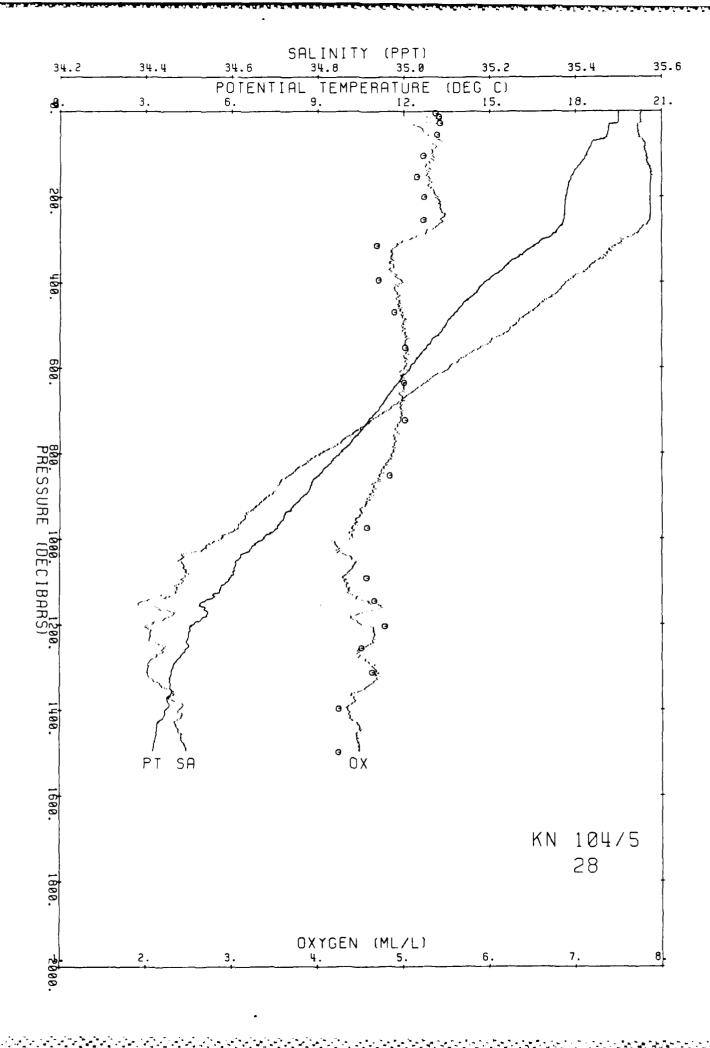


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			18 606							38.141			. 10	6.47	69 8
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140	. 7	976	17 952	35.574	5.3	98.9	25.725	30 026	34.232	38.347	42.373	231.0	. 35	3.23	139.5
160	17	848	17 821	35.575	5.3	98.8	25.758	30 061	34 270	38 387	42 414	228.6	.40	2.29	159.5
180	17	764	17 733	35 574	5.3	98.9	25.779	30 083	34.293	38.411	42.440	227.4	44	1 81	179.4
300	17	705	17.671	35.574	5.4	100.5	25.794	30 099	34 310	38 430	42.459	226.6	. 49	1.55	199 3
220	17	677	17 640	35.574	5.4	100.8	25.801	30 108	34 319	38.439	42 469	226.5	. 53	1.10	219 2
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260	17	598	17 554	35.569	5.4	100.8	25.819	30 126	34 339	38 460	42 492	226.4	. 6 2	1 28	259.0
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380	15	252	15.194	35.404	4.9	86.8	26.241	30.591	34.845	39.006	43.075	189.2	. 87	3.16	378 4
400	14	852	14.792	35.378	5.0	87.8	26.310	30.667	34.928	39.096	43 173	183.1	91	3.34	398 3
450	14	. 128	14.062	35.318	4.5	85.4	26.421	30.792	35.066	39.247	43.336	173.6	1.00	2.70	448.0
500	13	535	13.464	35.259	5.0	85.1	26.500	30.883	35.169	39.360	43.460	167.1	1.08	2.30	497.7
550	12	884	12.808	35.180	5.0	85.1	26.572	30.968	35 266	39.471	43.582	161.1	1.17	2.22	547 4
600	12	. 324	12.243	35.106	5.0	83.3	26.625	31 033	35.343	39.558	43.681	156.8	1.25	1.94	597.1
650	11	727	11.642	35.029	5.0	82.3	26.680	31.101	35.423	39.650	43.784	152.2	1.32	1 98	646 7
700	11	193	11 104	34.960	5.0	80.9	26.726	31 158	35.492	39.729	43 874	148.4	1.40	1.83	696 4
750	10	. 559	10.467	34.887	4.9	78.9	26.783	31.229	35 576	39.827	43 983	143.3	1 47	2.05	746.0
800	9	859	9.765	34.807	4.9	76.8	26.842	31 303	35.665	39.930	44 101	137.8	1.54	2.10	795.6
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1000	7	. 193	7.094	34.576	4.4	65.0	27.072	31.595	36.018	40 342	44.569	114.8	1 79	2.18	993.9
1100	5	950	5.850	34 . 485	4.3	62.1	27.165	31.719	36 171	40.524	44.779	104.6	1.90	1.97	1093 0
1200	4	.759	4.660	34.411	4.5	62.9	27.247	31 832	36 313	40 695	44.977	94.8	2.00	1.91	1192.0
1300	4	049	3.948	34.406	4.6	638	27.319	31.922	36 422	40 821	45 120	87.0	2.10	1 72	1290.9
1400		774	3.667	34.475	4.4					40.924			2.18		1389.8
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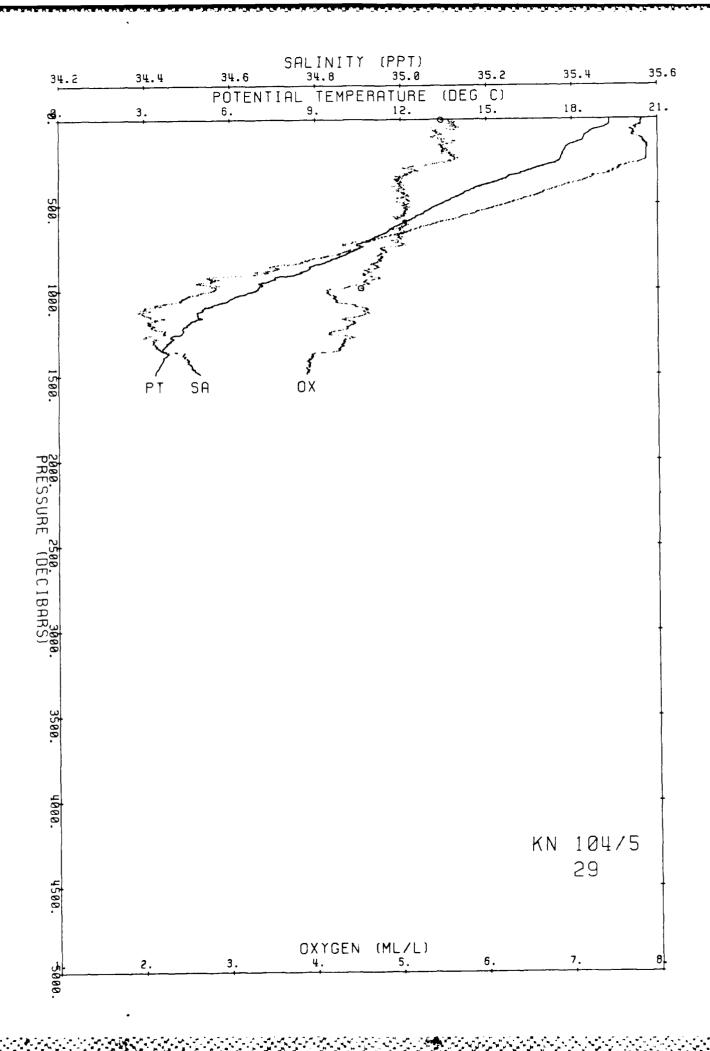
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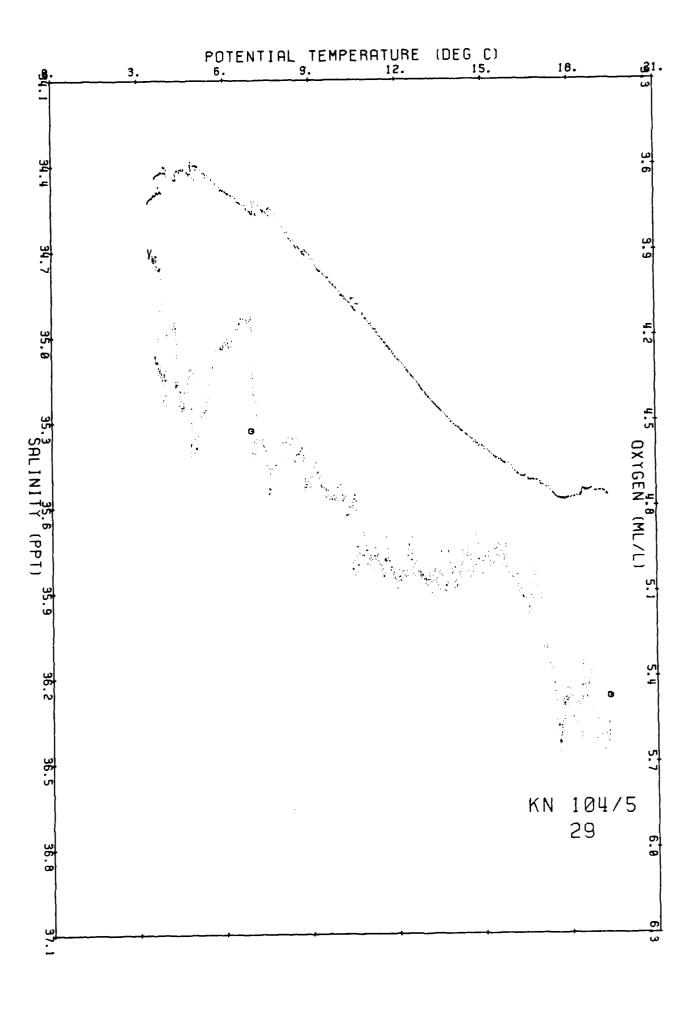


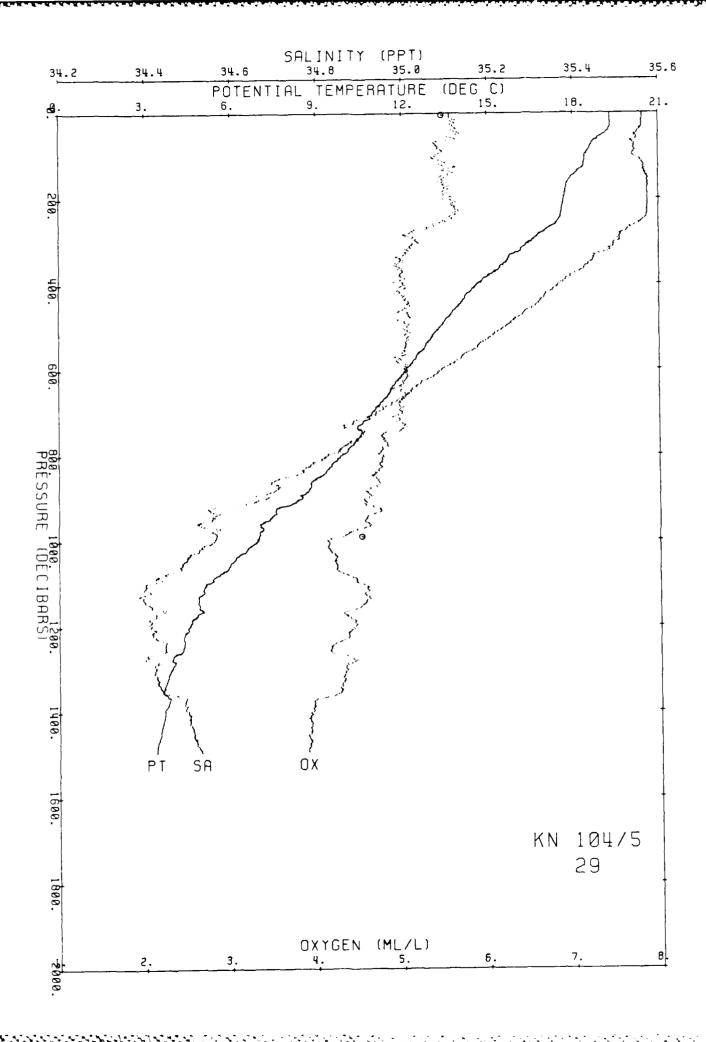




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260 3 .05 .41 19.9 260 7 .08 25 29 9 260 0 .10 1 89 39 9 256 7 .13 3 48 49 9 252 2 .16 4 01 59 8 248 4 .18 3 70 69 8 248 4 .18 3 70 69 8 248 3 .23 2 53 89 7 243 4 25 2 74 99 7 241 2 30 2 20 119 6 236 1 35 3 .1 139 5 229 3 .40 3 53 159 5 227 9 .44 1.87 179 4 226 8 .49 1 77 199 3 226 5 .53 1 27 219 2 226 0 .58 1 42 239 1 224 2 62 2 04 259 0 215 7 .67 3.91 278 9 202 9 .75 3 48 318 8 196 4 .79 3 44 338 .7 192 3 .83 2 .83 358 5 186 5 .87 3 26 378 4 180 2 90 3 38 398 3 182 3 7 92 46 448 0 165 6 1 08 2 .37 497 7 161 2 1.16 1 96 547 4 156 1 1.24 2 08 597 1 151 7 1 32 1.95 646 7 147 0 1 39 1 98 696 4 143 4 1 46 1 79 746 0 138 4 1.53 2.01 795 6 127 5 1.67 2 08 894 8 13 5 1.79 2 29 993 9 100 3 1.89 2 20 1093 0 93 1 1.99 1.67 1192 0 84 9 2.08 1 75 1290 9 77 5 2.16 1.66 1389 8 72 2 2 2.33 1 48 1481 7	29 . 54 29 . 64 29 . 64 29 . 76 29 . 81 30 . 01 30 . 31 30 . 76 30 . 91 31 . 6	935 935 935 935 900 063 1184 149 123 232 451 524 655 746 951 019 112 214 214 899 976 695 746 895 976 895 976 897 976 877 877 877 877 877 877 877 877 877 8
3	40 3 37 3 72 3 76 34 54 34 54 34 88 34 00 34 25 35	259 260 250 252 248 245 241 236 227 226 226 224 215 209 227 196 192 165 161 156 147 143 138 138 147 143 147 143 147 143 147 143 147 147 147 147 147 147 147 147 147 147
.05	3 828 3 828 3 828 3 964 4 074 4 268 4 330 4 628 4 964 5 217 5 048	5 8 3 7 0 7 2 4 8 3 4 2 1 3 9 8 5 0 2 7 6 9 4 3 5 2 6 6 2 1 7 1 1 1 1 1 2 2 2 5 5 3 1 1 2 2 2
1 19 9 25 29 9 1 89 39 9 33 48 49 9 7 2 74 99 7 2 20 119 6 3 11 139 5 3 159 5 1 87 179 4 1 77 199 3 1 27 219 2 1 42 239 1 2 20 4 259 0 3 91 278 9 3 35 8 5 3 26 378 4 338 7 2 83 358 5 3 26 378 4 338 37 2 83 358 5 3 26 378 4 338 39 3 2 246 448 0 2 37 497 7 1 96 547 4 2 08 597 1 1 95 646 7 1 98 696 4 1 79 746 0 2 0 1 75 1290 9 1 66 1389 8 1 48 1481 7 5 5 3 5 4 14 49 19 2 0 65 42 077 5 1290 9 1 66 1389 8 1 48 1481 7 5 5 3 5 4 2 198 10 377 42 404 15 30 377 42 404 15	9 37 5 37 1 37 4 38 4 38 2 38 2 38 2 38 4 39 7 39	035 005 100 113 116 121 123 130 144 143 145 146 157 179 189 199 199 199 199 199 199 199 199 19
19.9 29.9 39.9 349.9 59.8 69.8 79.8 79.7 119.6 139.5 159.3 219.2 239.1 239.1 278.9 298.9 318.7 358.7 358.7 449.7 447.4 597.1 646.4 746.0 74	921 918 914 065 180 377 450 764 135 414	259 849 3 4010 3 70755 2 2 740 2 113 3 1 8777 2 2 9 153 1 1 1 2 0 9 153 3 3 4 4 4 3 3 6 6 8 6 9 7 9 7 0 1 8 2 6 7 5 7 0 1 2 2 2 2 2 6 7 5 1 6 6
1 2 5 5 6 6 6 6 6 7 6 6 6 6 6 7 6 6 6 6 7 6 6 6 6 7 6 6 6 6 7 6 6 6 6 7 6 6 6 7 6 6 6 7 6 7 6 6 7	41 927 41 923 41 919 42 077 42 198 42 404 42 480 42 815 43 214 43 519 44 599	10 C 19 5 19 5 19 5 19 5 19 5 17 9 4 19 5 17 9 4 19 5 17 9 4 19 19 19 19 19 19 19 19 19 19 19 19 19
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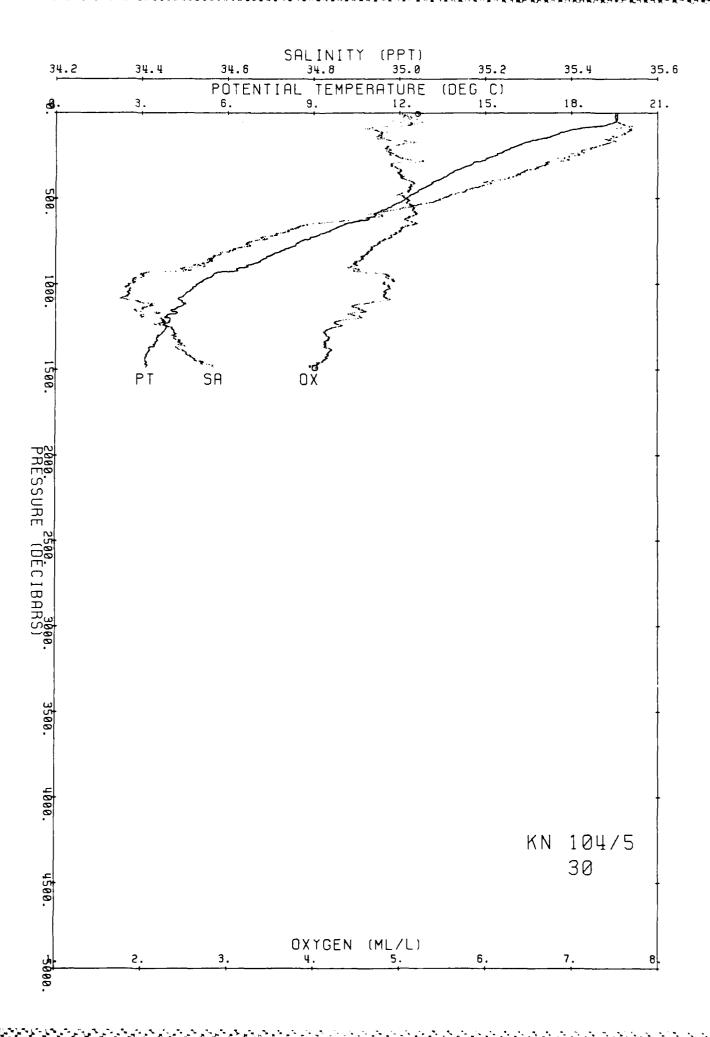


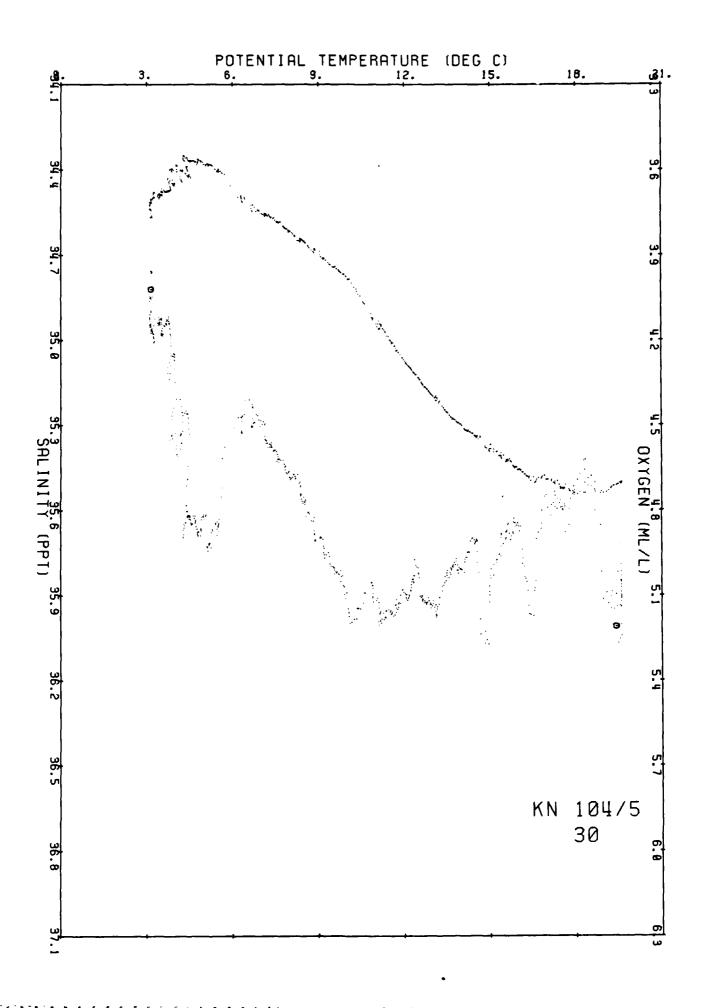


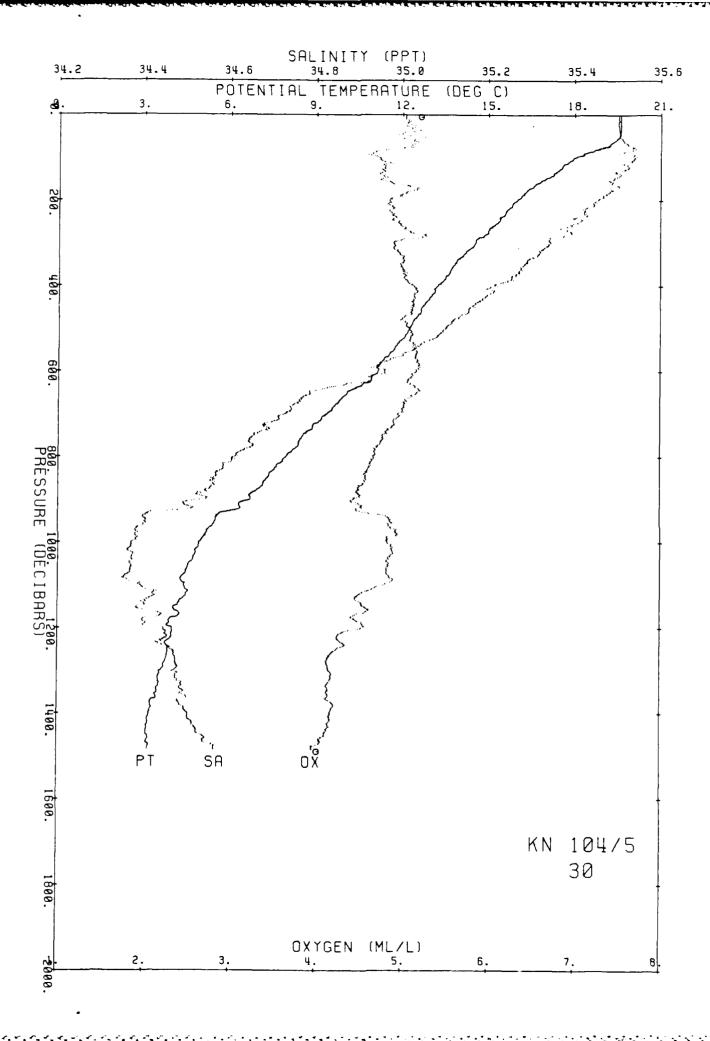


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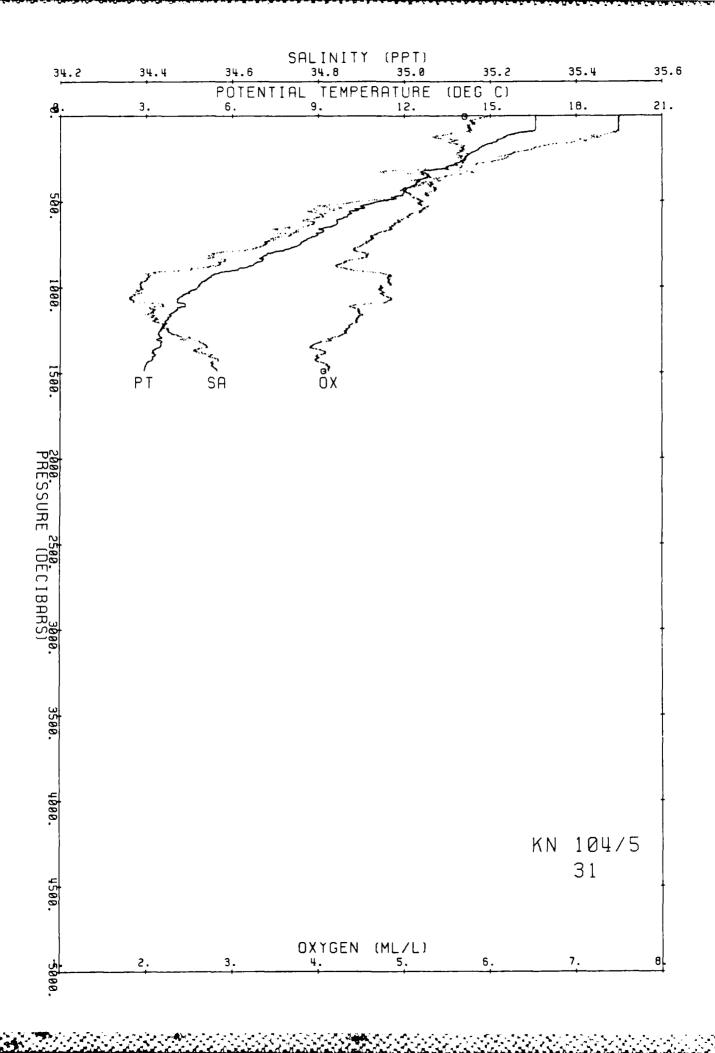
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10 19 60	4 19 603 35 503	2 5 0 97 0	25 250	29 525 3	3 707 37	797 41	799 271	. 3 .03	39 10	0
20 19 60	5 19 601 35 501	1 5 0 97.3	25 250	29.525 3.	3 706 37	796 41	799 271	8 05	36 19	9
30 19 60	9 19 604 35 50	3 5 1 98.5	25 251	29 526 3	3 707 37	797 41	.799 272	1 .08	55 29	9
40 19 59	6 19 589 35 50	3 5 1 99 1	25 255	29 530 3	3.711 37	802 41	804 272	1 11	1 10 39	9
50 19 56	2 19 553 35 509	5 5 1 98.9	25 266	29.541 3	3 723 37	.814 41	817 271	5 14	1 85 49	9
60 19 43	0 19 419 35 51	2 5 1 97 9	25 306	29 584 3	3.768 37	860 41	865 268	0 .16	3.55 59	8
70 19 24	4 19 232 35 52	3 5 1 97.8	25 363	29.643 3	3 830 37	.926 41	933 263	0 .19	4 23 69	а
80 18 88	7 18 873 35 540	0 4 9 92 3	25.468	29 754 3	3 946 38	047 42	059 253	4 22	5 75 79	8
90 18 33	0 18 315 35 500	3 4 7 87 7	25 580	29.876 3	1.077 38	.187 42	207 243	0 .24	5 96 89	7
100 17 97	7 17 960 35 540	3 4 7 88 5	25.697	29 998 3	4 205 38	1.319 42	. 345 232	2 26	6 06 99	7
120 17 59	2 17 572 35.524			30.087 3					3 62 119	6
	5 17 282 35.508			30.150 3					3 03 139	5
	3 16 697 35 486			30.283 3					4.41 159	
	3 16 303 35 483			30 379 3					3 76 179	
	1 15 989 35 458			30.439 3					2 94 199	
	4 15 699 35.420			30 481 3			_		2.44 219	
	1 15 404 35 399			30.537 3					2.85 239	
	3 15 153 35 385			30.587 3					2 69 259	
	0 14 898 35.381 6 14 541 35 341			30.644 3					2 92 278	
	9 14 232 35 34			30.699 34 30.755 31				-	2 79 298 2 85 318	
	7 13 898 35 29			30 /55 3					2 79 338	
	2 13 710 35.275			30.839 3					2.10 358	
	4 13 510 35 254			30 869 3					2 05 378	
	0 13 234 35 22			30.905 3					2 28 398	
450 12 75	2 12 691 35 159			30.977 3					2 03 448	
500 12 31	2 12 245 35 100			31.028 3					1 70 497	
550 11 77	7 11.705 35.02	2 5 1 84 4	26.663	31.082 3	5.403 39	629 43	.762 151	3 1.07	1.74 547.	3
600 11.22	8 11.152 34 959	9 5.2 84.0	26.716	31 147 3	5.480 39	717 43	860 146	9 1 . 14	1 94 597	0
650 10 15	4 10 077 34 789	5 5 2 81.9	26 771	31 226 3	5.582 39	841 44	006 141	5 1 22	2 09 646	6
700 9 44	5 9.365 34.72	7 4 9 77.2	26 . 846	31 316 3	5.687 39	961 44	141 134	6 1 28	2 30 696	3
750 8 62				31.412 3					2 37 745.	9
800 8.05				31.477 3					1 97 795.	5
900 6 78				31.634 3					2 19 894.	
1000 5 00				31.764 3				0 1.63	1 99 993.	
1100 4.48				31.852 3				. 8 1 73	1 66 1092	
1200 4 09				31 947 3				7 1 82	1 74 1191	
1300 3 71 1400 3 31				32.016 3				9 1 90	1.49 1290	
1485 3 26	-			32.091 30 32.149 30				4 1.97	1 57 1389. 1.46 1473	
1403 3 20	, , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		4, 540	32.149 3	3.000 41		403 00	, , 2 03	1.40 14/3	0
PR TE	PT SA	02 SI	PO	N3 N2	NH4	so	Sı	S 2	S3 S4	DE
5 19 40	9 19 408 35 526	5 5 21 5 4	0 38	1 8 0 0	4 0 20				874 41 879	5 0
	7 19 415 35 52		0.28	2.0 0.0					870 41 875	
27 19 42	9 19 424 35.521	1 4.4	0 26	1 9 0.0	4	25 311	29.589	3.773 37	866 41 870	26 9
52 19 29	6 19 287 35 526	5 4.9	0.27	2 4 0 0	4	25.351	29 631 3	13 817 37	911 41 918	51 8
	1 17 873 35 519		0.53	6000	3 0 29	25.699	30.002	34.210 38	326 42 353	103 8
	3 16 617 35 53		0.34	2 4 0 1					704 42 750	
	4 16 071 35.54:		0 38	3 4 0 0					866 42 921	
	7 14 481 35 343		0 73	8 3 0 0					154 43 236	
	0 12 981 35.183		0.80	77 00	L				428 43.537	
	3 12 065 35.085		0.96	9 1					587 43.713	
979 5 20 1489 3 25		3 22 8 4 4.02 58.2	2.15 2					_	.586 44.858	-
1407 3 20	T 3.134 34 3/4	7 7.04 35.4	2.64	,,,		27.331	34.134 3	10.0/3 41	.090 45.407	14/4 5

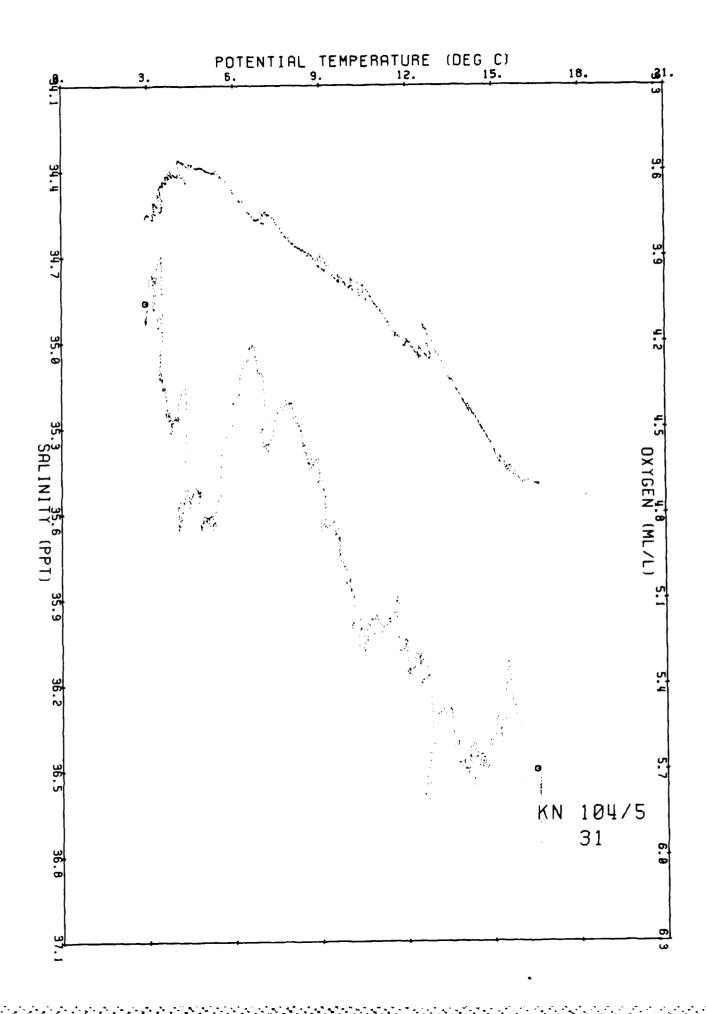


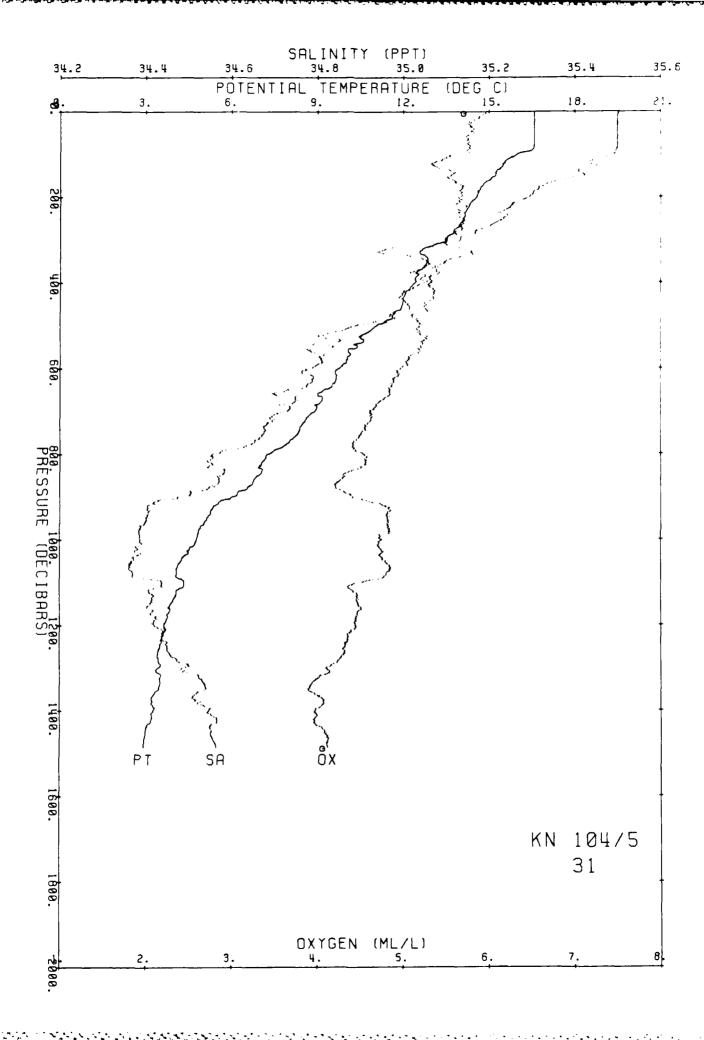




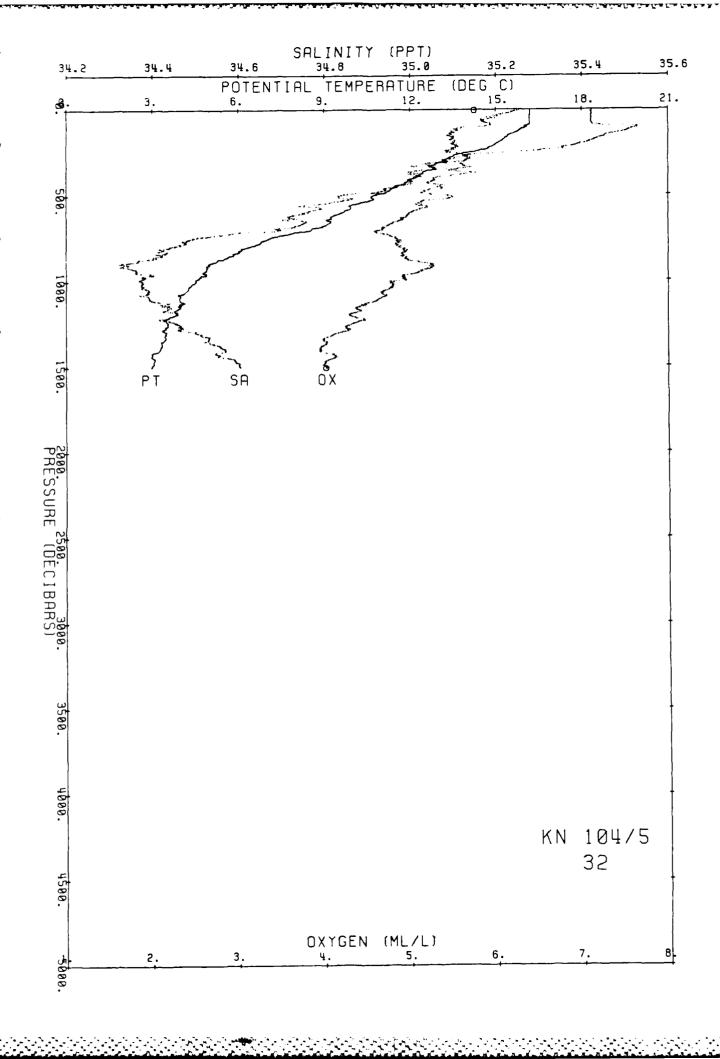
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Start 39	15.25 S	17	30.72 E		552 83/	11/95	
End 39	16.20 S	17	30.72 E	_	710	11/23	
End 38	10.20 3	1 4	30.30 E	at 7	110		
PR TE PT	SA OX OS	s so	S1 S2	S 3	S4 AN H	Z BV DE	
0 16.581 16.581	35.502 6.0 108	5 26.000	30 325 34 554	38.691 42	2.738 199.7 0	00 0 00 0.0	
10 16 590 16 589	35.500 5.9 106	9 25.996	30.321 34.550	38 687 42	2.734 200.4	02 -1.03 10 0	
20 16.595 16.592			30.320 34.550			0446 19 9	
30 16 592 16 587			30.321 34.550			06 .32 29 9	
40 16 592 16 586			30.321 34.550			08 29 39 9	
50 16.594 16.586			30.321 34 550			10 .10 49 8	
60 16 594 16 585 70 16 590 16 579			30.321 34.551			12 .29 59 8	
80 16.586 16.573			30.323 34.552 30.324 34.554			14 .67 69.7 16 .65 79.7	
90 16 522 16 507			30.324 34.569			18 2 03 89 7	
100 15.977 15.962			30.471 34.711			20 6 22 99 6	
120 15.591 15 573			30 539 34.786			24 3.12 119 5	
140 15 278 15 256			30.579 34.832			28 2.33 139 5	
160 15.082 15.058			30.605 34.861			31 1.87 159 4	
180 14.720 14 693	35.316 5.7 99	5 26.284	30.643 34.906	39.076 43	1.155 178.5	35 2.26 179 3	
200 14 592 14.562			30.658 34.924			38 1.41 199.2	
220 14 332 14 300			30.686 34.956			42 1 92 219.1	
240 14.201 14 166			30.710 34.983			45 1.86 239.0	
260 14.044 14.007			30.724 35 000			49 1 38 258 9	
280 13.798 13 758 300 13.548 13.505			30.746 35.028 30.774 35.061			52 1.71 278 8 56 1.96 298.7	
320 12.736 12 692			30 822 35 125			56 1.96 298.7 59 2.38 318 6	
340 12.867 12 820			30.854 35.154			63 2.31 339.5	
360 12.789 12 740			30 885 35 186			66 2 15 358.4	
380 12 575 12 524			30.930 35.235			69 2.56 378 3	
400 12 461 12.408			30.953 35 261			72 1.86 398.1	
450 12.036 11.977	35.009 5.3 87	2 26.601	31.015 35.331	39 552 43	1.679 154.6	80 1.88 447.8	
500 11.144 11.082			31.107 35.442			88 2.27 497 5	
550 10.453 10.387			31 205 35.554			95 2.39 547 2	
600 9.839 9.769	-		31 281 35.643				
650 9 314 9 241 700 8.999 8.921			31.344 35.718				
700 8.999 9.921 750 8.428 8.348			31.401 35.782 31 461 35 855				
800 7.352 7.272			31.550 35.968				
900 6.084 6.002			31.689 36.138				
1000 4.867 4.785			31.795 36.274				
1100 4.435 4.347			31.896 36.385				
1200 3.741 3.651	34.421 4.5 60	7 27.361	31.972 36.479	40.885 45	5.191 81.2 1.		
1300 3.522 3.426			32.051 36.564				
1400 3.370 3.266			32.119 36.635				
1486 3.041 2.934	34.564 4.1 55	3 27.543	32.172 36.697	41.120 45	5.442 64.2 1.1	86 1.44 1474 4	
PR TE PT	SA 02 S	PO	N3 N2 NH	s s o	S1 S2	S3 S4 DE	
4 16.476 16.475		7 0.29				38.720 42.769 4.	,
13 15.478 16.476		2 0.27				38.718 42.767 13.	
28 16 484 16 480			1.6 0.10			38.716 42.765 27.	
52 16 492 16 484			1.6 0.11			38.715 42.763 52.	
102 15.919 15.903			4.2 0.08			38.873 42.931 101.	
151 15.274 15 251	35.425 5	0 0.41	4.3 0.07	26 . 245	30.594 34 846	39.006 43.074 149	7
200 14.656 14 626		0.41				39.092 43.172 198.	
300 13.376 13.334			4.5 0.03			39 273 43 376 297.	
399 12 253 12 200			9.5 0.02			39.505 43.629 395.	
502 11 058 10 995						39.701 43.848 497.	
1002 4.848 4.766 1489 3.039 2.932						40.658 44.938 992.	
1489 3.039 2 932	34.567 4.06 34	3 4.01	19.9	40 47 146	34 1/3 30 699	41.122 45.445 1472.	4

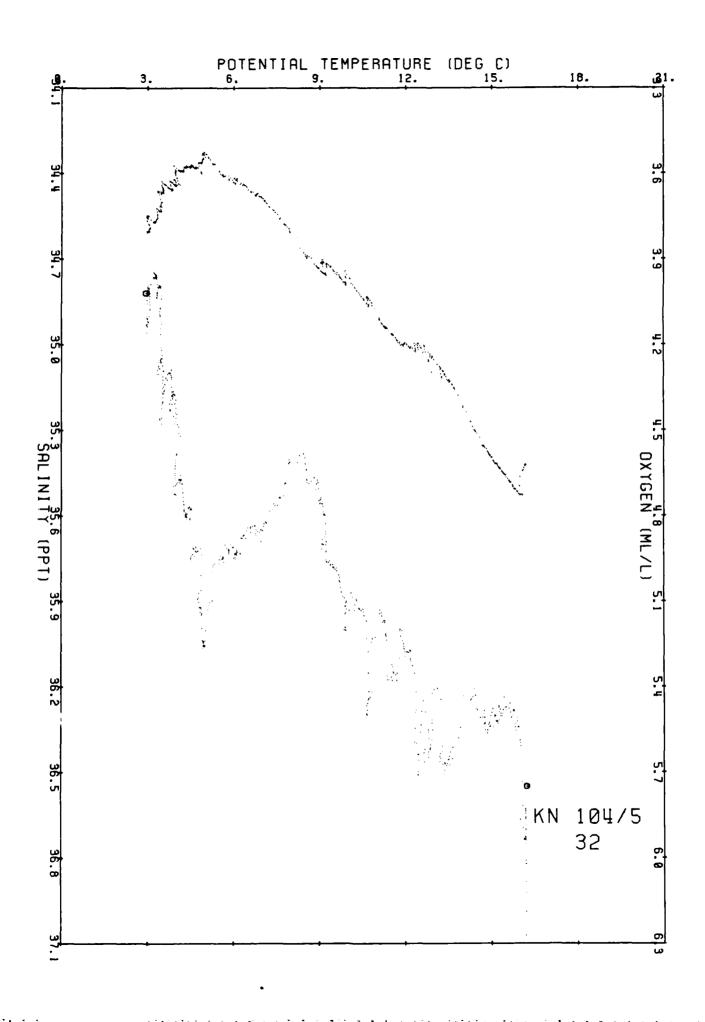


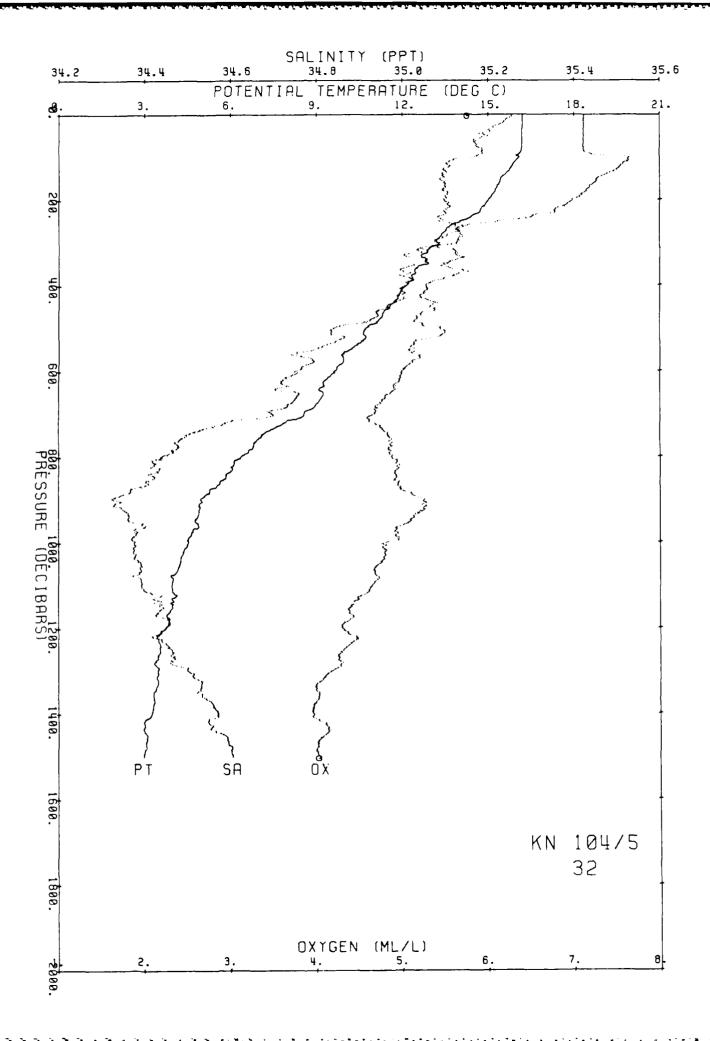




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End	39 1	5.44 S	17	21.09 B	Eat	1000		
=	PT SA				2 S3	S4 AN	HZ BV	DE
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10 15 205 16 20 16 208 16						42 790 197 42 792 197		10.0 19.9
30 16 198 16						42 795 197		29.9
40 16 195 16						42 796 198		39 9
50 16 194 16	187 35 4	122 5 0 10 8	2 26 030	30 362 34	599 38 743	42 796 198		49.8
60 16 192 16						42 798 198		59.8
70 16 192 16						42 798 199		69 7
90 16 188 16 90 16 147 16						42 800 199 42 821 197		79 7 89 7
100 16 098 16						42 907 190		99.6
120 15 869 15						42 961 187		119.5
140 15.618 15	.596 35 4					43 011 184		139 5
160 15.426 15						43 048 183		159.4
180 15.277 15						43 078 182		179.3
200 15:031 15 220 14:798 14						43 126 179		199.2
240 14 441 14						43 165 178 43 225 175		219.1 239.0
260 13 738 13						43 313 172		250.9
280 13 429 13	390 35 1					43 366 170		278.8
300 13 258 13						43 401 168		298.7
320 12 909 12						43 460 166		318.6
340 12 968 12						43 487 164		338.5
360 12 563 12 380 12 385 12						43 531 162 43 580 159		358.4 378.3
400 12 197 12						43 636 156		398.1
	528 34 3					43 765 149		447.8
	122 34 8					43.882 145		497.5
	161 34					43.990 140		547.2
	617 34 7 227 34 7					44 095 135 44 197 129		596.9
	554 34 6					44 317 123		646.5 696.1
150 1 .54 1	381 34 4					44 513 116		745.7
800 5 420 6	346 34 4	139 4 9 70	8 27 065	31 607 36	048 40 390	44 634 110	.7 1.26 2.04	795.3
	974 34 3					44 854 101	.0 1.36 1.91	894.5
	525 34 3			31 823 36			.4 1.46 1.70	993.6
	967 34 3 124 34 4			31 911 36				1092.6
	470 34 5			31 985 36 32.058 36.				1191.6 1290.5
	251 34 5			32 139 36				1389.4
1500 3 090 2	981 34 6	06 4 0 54	3 27 572	32 200 36	723 41 144			1488.2
1501 3 377 2	968 J4 6	03 4 0 54	2 27 571	32 199 36.	722 41.144	45 466 61	.9 1.84 -9.99	1489.2
PR TE	PT SA	. 02 S	I PO	N3 N2	NH4 SO	\$1	S2 S3	S4 DE
4 16 215 16				1.6 0.03			4.596 38.739 4	
14 16 208 16				0 9 0 02			4 596 38 740 4	
28 16 184 16			7 0 23	1 0 0 01			4.603 38 747 4	
52 16 171 16				1.2.0.02			4.608 38.752	
103 15 938 15			0 0 31	2 3 0.15			4.712 38 860 4	
153 15 518 15 204 15 047 15			9 0 43	4.5 0.03 3.2 0.03			4.817 38.972 4 4.892 39.055 4	
304 13 286 13				5.0 0.02	26 4	34 30 B22 3	5.113 39.310 (13.126 201.8 13.415 301.1
403 12 176 12			.4 0.84 1	.0.5 0 01	26.5	76 30.987 3	5.300 39.518	13.643 399.1
499 10 826 10		154 6	. 2 0 98 1	.2.1	26.7	05 31.145 3	5.113 39.310 4 5.300 39.518 4 5.486 39.731 4	3.882 494.0
	488 34 3		.9 2.16 3	10.9	27.2	42 31.831 3	6.318 40.703 4	14.990 988.3
1503 3.051 2	.942 34.6	507 4 02 56	.6 2.47 3	12.0	27.5	77 32.205 3	6.729 41.152 4	15.474 1496.3







0.52 4.3

1.35 15.8

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33.2

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50 3 2.44 28.9

8.2

31.6

26.413 30.808 35.106 39 309 43.420

26.459 30.861 35.165 39.373 43.490

26.585 30.999 35.316 39.537 43.665

26 735 31.176 35.520 39.767 43.920

26.855 31.329 35.702 39.979 44.161

27.272 31.877 36.379 40.779 45 080

27.580 32.208 36.732 41.155 45.477 1444.4

160 12.941 12.919 35.004

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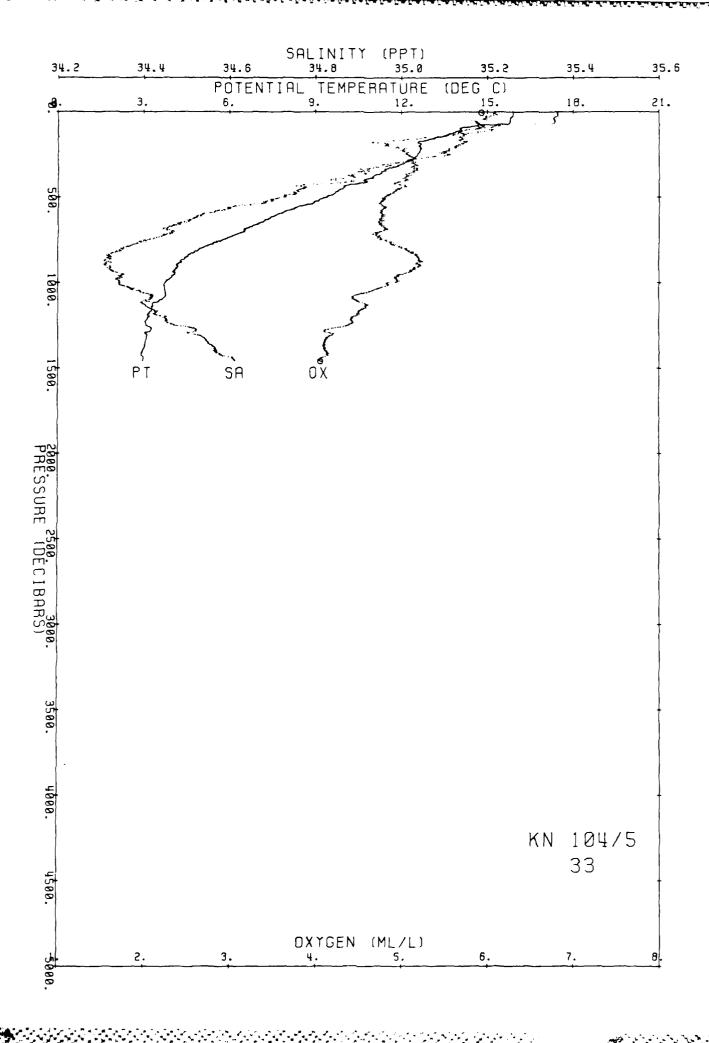
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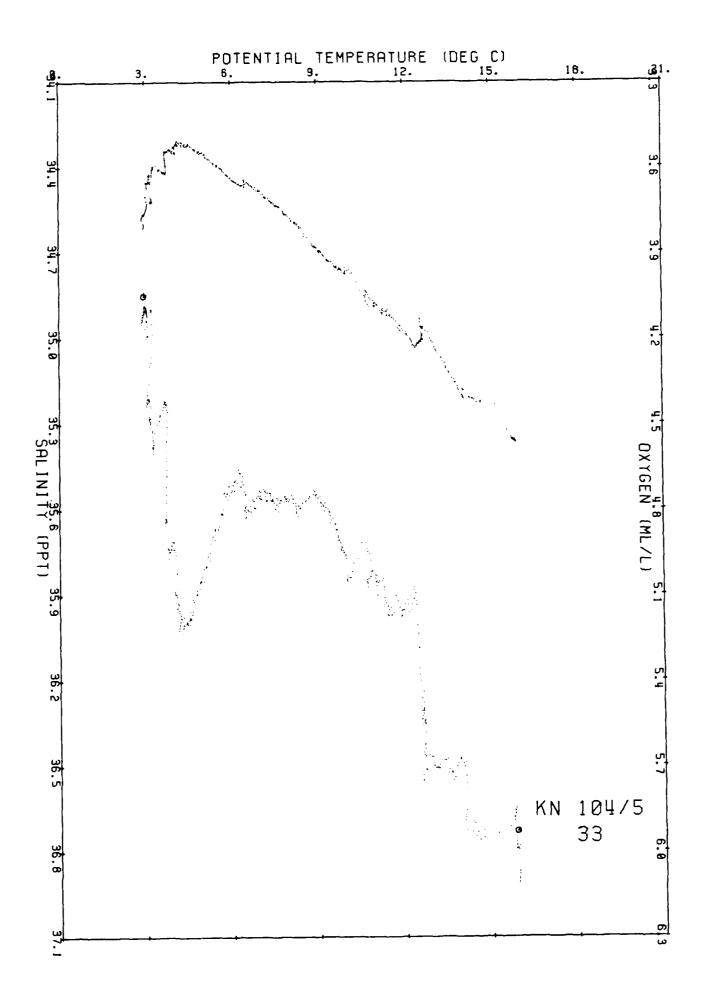
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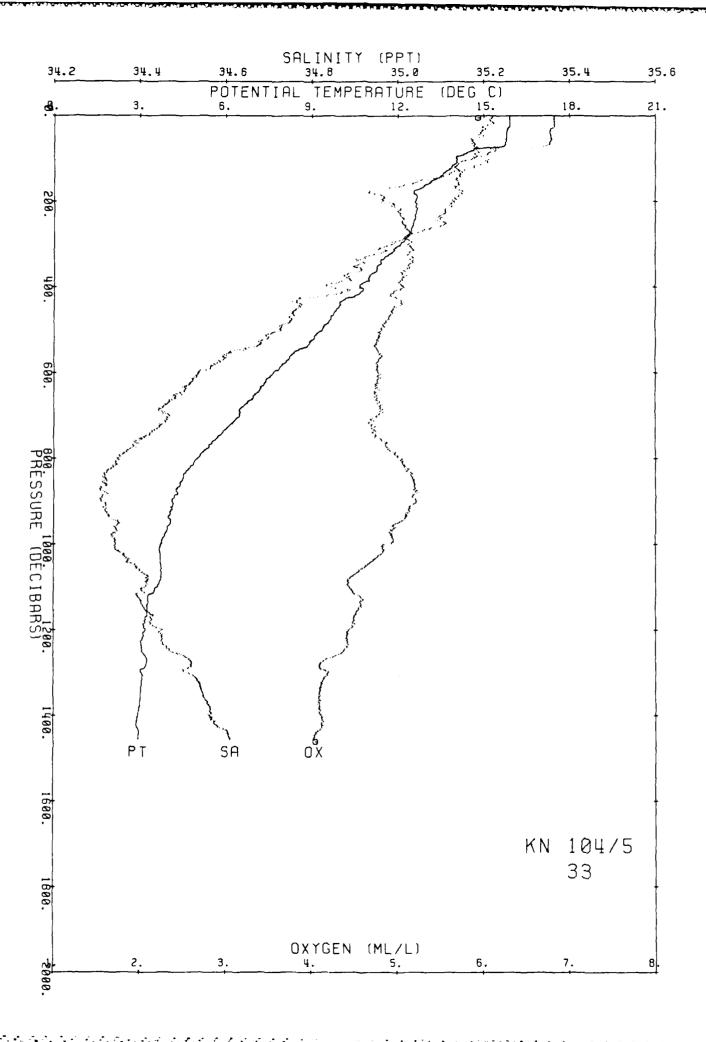
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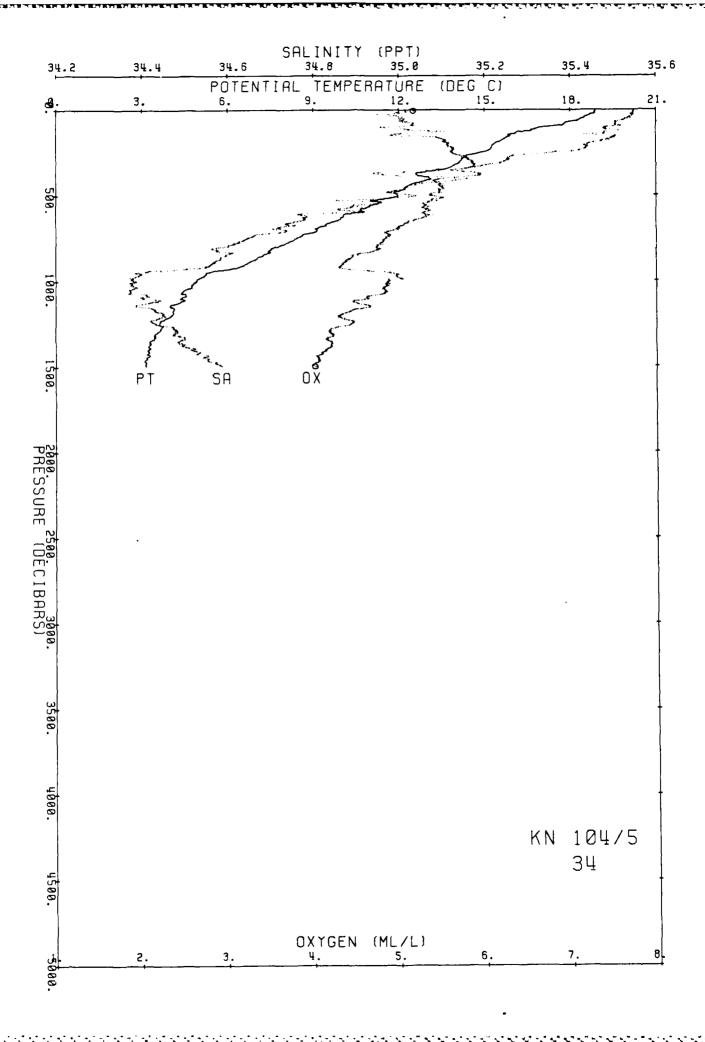


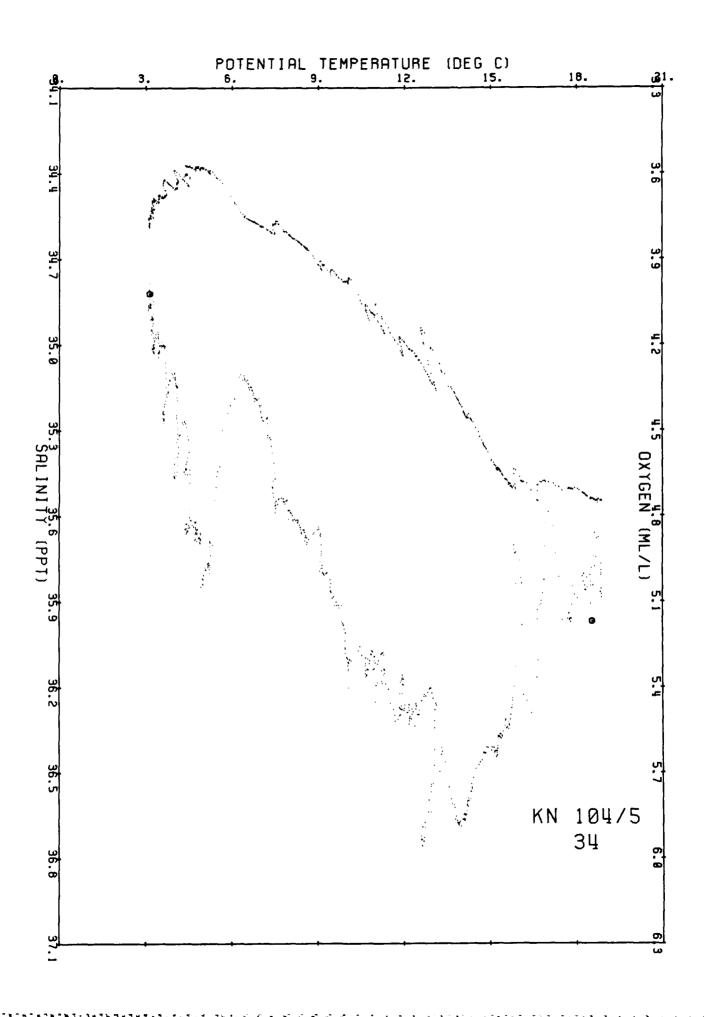


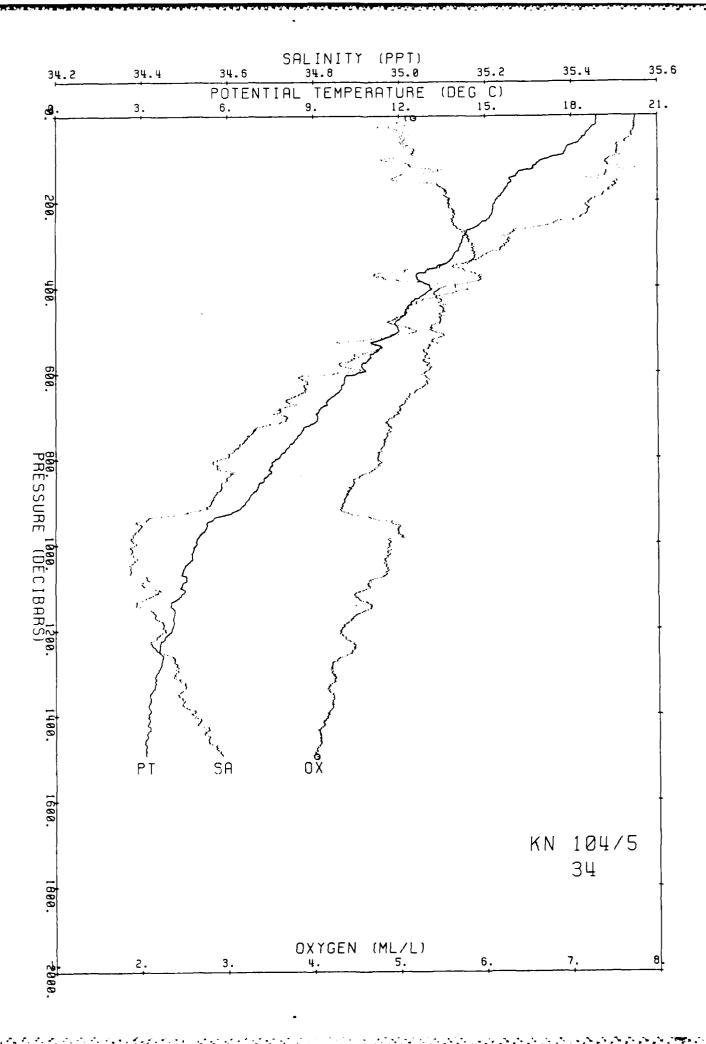
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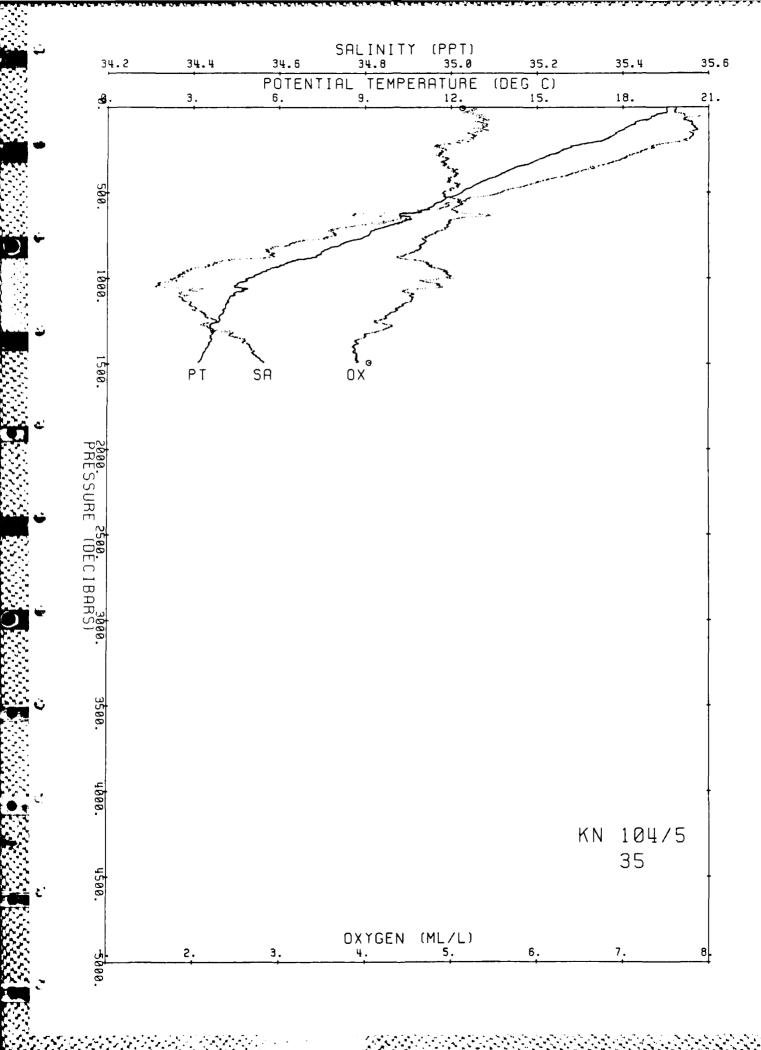


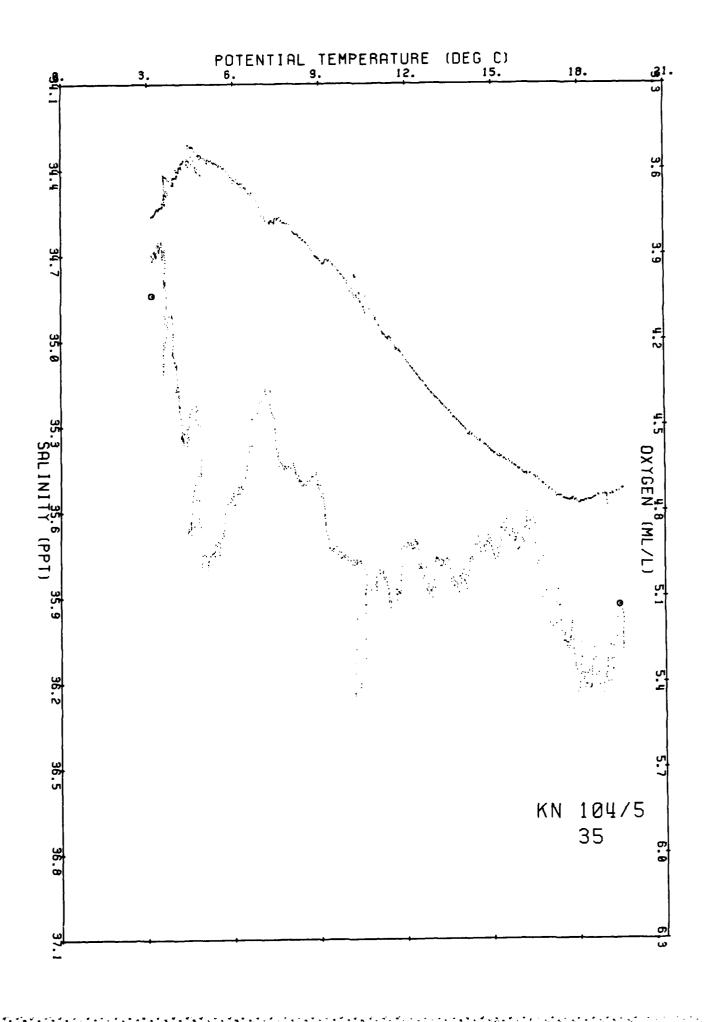


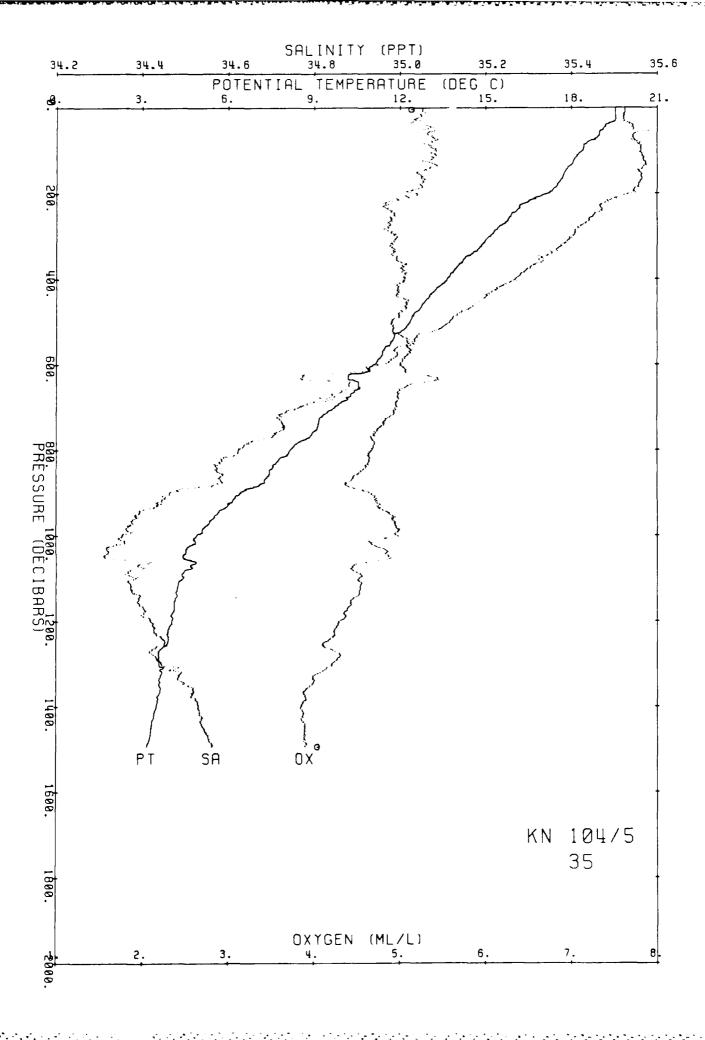
Cast Ship KN Cruise 1045 Station 35 1 DT 11.93 E Start 39 15.41 S 18 at 2208 83/11/25 17.20 S 39 End 18 15.01 E 2356 PP TF PT SA OX 0.5 50 51 52 53 **S4** AN HZ BV DE 0 19:537 19:537 35:525 5:3 101:3 25 285 29:561 33 743 37 834 41 837 267 6 0 00 0 00 10 19 540 19.538 35.524 5 3 101 8 25 284 29 560 33 742 37 833 41 836 268 1 20 19.549 19.545 35 521 5.3 101.5 25.280 29.556 33.738 37.829 41 831 268 9 30 19.536 19.531 35 522 5.2 100.7 25.284 29.560 33.743 37 834 41 837 268 9 40 19.210 19.203 35.542 5.3 101.0 25.385 29.666 33.853 37 949 41.956 259 50 19.117 19.108 35.544 5.3 100.8 25 411 29.693 33 882 37 979 41 988 257 7 60 18.999 18.988 35 549 5.3 101.5 25.445 29.730 33.920 38 019 42 029 254 7 16 3 30 70 18.931 18.919 35.542 5 4 102.4 25.458 29.743 33.935 38.035 42 046 253 9 18 80 18 597 18 583 35 551 5.4 101.8 25.550 29.841 34.037 38 142 42 159 245 5 5 19 21 90 18.446 18.431 35 562 5.4 101 3 25.596 29.890 34 089 38.196 42.215 241 5 23 3.84 100 18.421 18.403 35.562 5 4 102 2 25 603 29 897 34 096 38 204 42 223 241 2 26 1 47 99 120 18 128 18 108 35 568 5.4 100 7 25.682 29.980 34.184 38 297 42 320 234 4 30 3 52 119 140 17.893 17.869 35.566 5 3 99 8 25 739 30.042 34.250 38.366 42.392 229 7 35 3 02 139 160 17 730 17 703 35 563 5 3 97.9 25 778 30.083 34.294 38.412 42.442 226.7 40 2.47 159 5 180 17 534 17.504 35.557 97.1 25.822 30.130 34.344 38.466 42 498 223 2 5 2 44 2 64 179 95.8 25.881 30.195 34.414 38.541 42.578 218 2 200 17.236 17.202 35.540 5.2 49 3 09 199 220 16.521 16.485 35.480 4.8 88 1 26 005 30 332 34 563 38 702 42 750 206 9 5.3 4 45 219 240 16.146 16.108 35.472 88.6 26.087 30.420 34.658 38 802 42.857 199 7 4.9 57 3 61 239 260 15 833 15.792 35.442 4.9 88 0 26 136 30.475 34.718 38 868 42 928 195 5 61 2 82 259 280 15.473 15.429 35.416 4.9 86.7 26.198 30.544 34.793 38.950 43 016 190 2 65 3.16 278 300 15 234 15 188 35 405 87.9 26.244 30.594 34 847 39 008 43.078 186 4 5.0 68 2 71 298 320 14.917 14.869 35.376 4.9 86.3 26.292 30.648 34 907 39 073 43.149 182.3 . 72 2 79 318 4 9 340 14 614 14.563 35.354 85.9 26.341 30.703 34.968 39 140 43 220 178 1 . 76 2.84 338 360 14 243 14 190 35 330 5 0 86.9 26.403 30.771 35.044 39.222 43 309 172.7 79 3 16 358.5 380 13.959 13.904 35.295 5.I 87.2 26 436 30.811 35.088 39 272 43.364 169.9 2 36 378 . 83 400 13 709 13.651 35.270 5.1 86.9 26.470 30.849 35 131 39.319 43.416 167 2 398 86 2 35 5.1 450 12.968 12.906 35.185 86.2 26 556 30.950 35.247 39.449 43.559 159 9 . 94 2.41 448.0 4.9 500 12.434 12.367 35.117 82.1 26 610 31.015 35 323 39 535 43.655 155.7 1.02 1.92 497 550 11.763 11.692 35.032 84.1 26 673 31.093 35.414 39.640 43.773 150 3 1.10 2.11 547 600 11.156 11.081 34.950 5 0 81.4 26.723 31.155 35.489 39.727 43.872 146 2 1 17 1.89 650 10 644 10.565 34.883 81.6 26.763 31.207 35 552 39.800 43 955 143.0 1 24 5.1 700 9 816 9.734 34.766 4.9 77.8 26 815 31.277 35.640 39.906 44.078 138.1 1.31 750 9 204 9.119 34.731 4 8 73.8 26.889 31.365 35.741 40.020 44.204 131.2 1.38 800 8 250 8.164 34.626 4.7 70.9 26.956 31.454 35.852 40.152 44 356 124.3 1.45 795 900 6.543 6.459 34.464 4.7 67.8 27.070 31.609 36.047 40.386 44.628 112 0 1 56 2.16 894 1000 5.008 4.925 34.356 5.0 70.0 27 174 31.752 36.227 40 603 44.880 100.1 1 67 1100 4.503 4.415 34.381 4.5 62.8 27 250 31.841 36.329 40.717 45.005 92.8 1.77 1.67 1092.8 1 200 4.141 4.047 34.421 4.3 59.1 27 321 31.921 36.418 40.814 45.111 86 2 1.86 1.59 1191.8 1300 3.700 3.602 34.446 4.2 57.4 27.386 31.998 36.506 40.913 45.220 79 7 1.94 1.57 1290.8 1400 3.618 3.512 34.532 3.9 52.5 27.463 32.077 36.587 40.995 45.304 73.1 2.02 1.57 1389.7 1493 3.276 3.166 34 562 3.9 52.6 27 520 32.143 36.662 41.079 45.396 67 3 2.08 1.53 1481.6 PR TF PΤ SA 02 81 PO N 3 N 2 NH4 SO S1 S 2 53 DF 5 19 423 19.422 35.533 5.13 4.8 0.30 1.4 0.05 0 20 25 321 29.599 33.782 37 875 41.880 13 19.424 19.422 35.532 0.26 1.4 0.04 25.320 29.598 33 782 37.875 41.879 27 19 426 19.421 35.531 0.25 1 4 0 04 4 7 25 320 29.597 33.781 37 874 41.878 52 19.160 19.151 35.549 3.3 0.21 0 9 0 12 25.403 29 685 33 873 37.970 41 978 102 18.336 18.318 35.566 0.33 2.7 1.04 4.7 25.628 29.923 34.123 38.233 42.253 152 17.739 17.713 35.571 5.2 0.33 2 3 0 03 25 781 30.086 34.297 38.415 42.444 201 17.029 16.996 35.539 0.44 3.5 0 02 25.930 30.247 34.470 38 600 42 640 4.3 298 15.166 15.120 35.407 5.7 0.62 6.7 0 01 26 260 30.611 34.866 39 028 43.099 398 13.630 13.573 35.260 6.9 0 79 10 1 0 01 26.478 30.859 35.143 39.333 43.430 394.0 506 12.212 12.144 35.094 7.4 0.94 12.2 26.635 31.045 35.357 39.574 43.698 501 8 992 5.285 5.200 34.384 21.5 2.02 28.0 27.164 31.735 36.204 40.572 44.843 981.6

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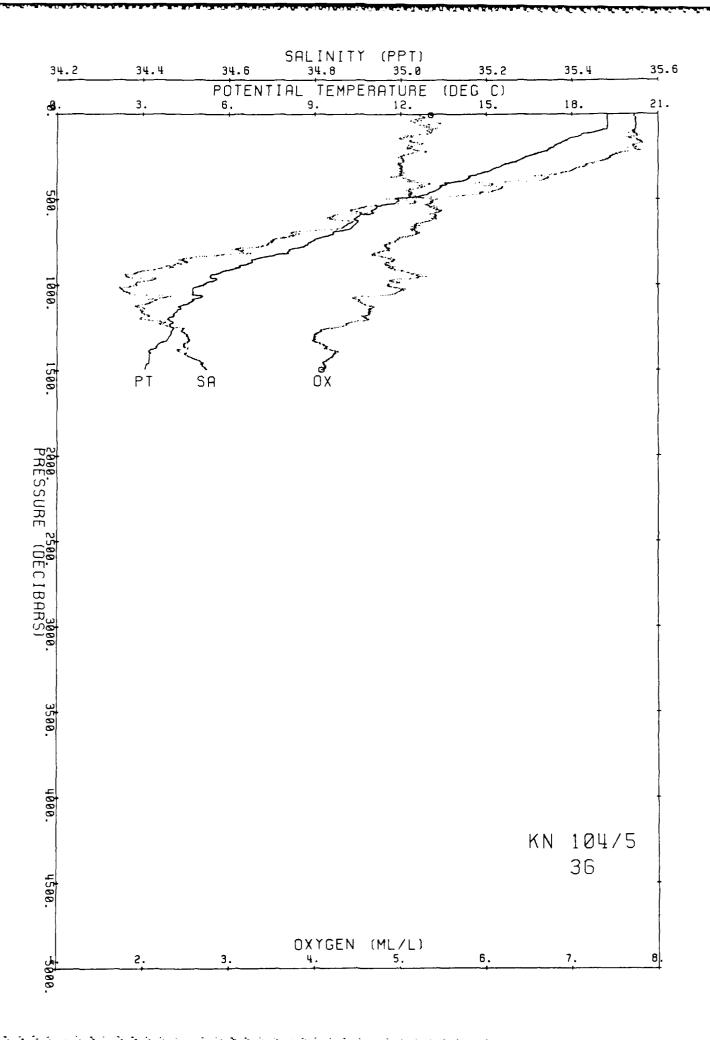
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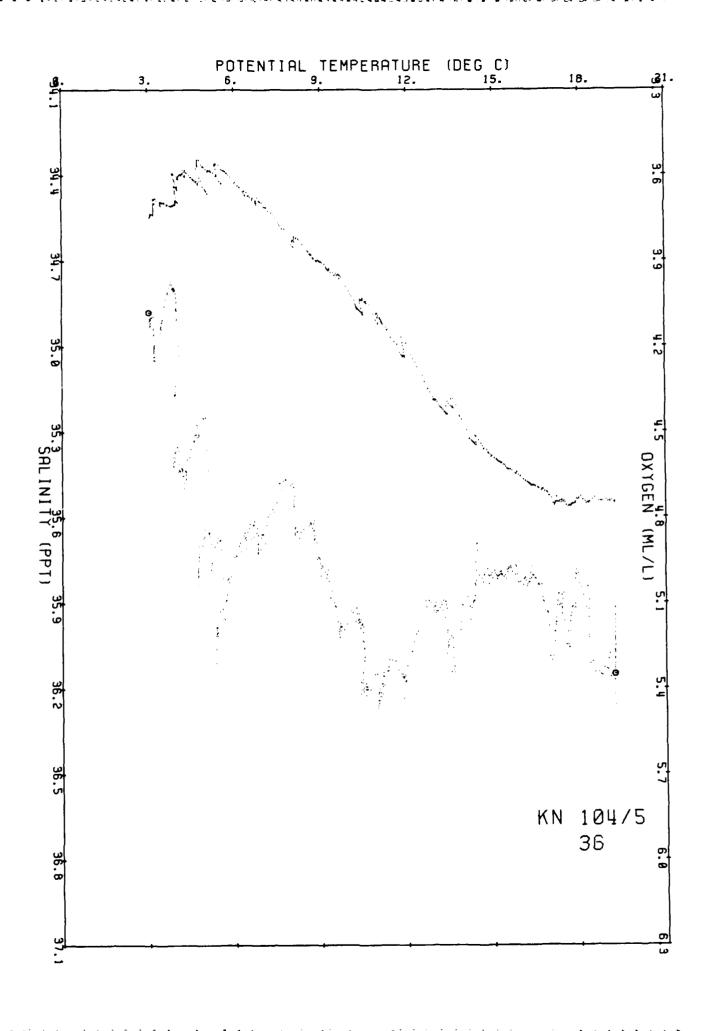


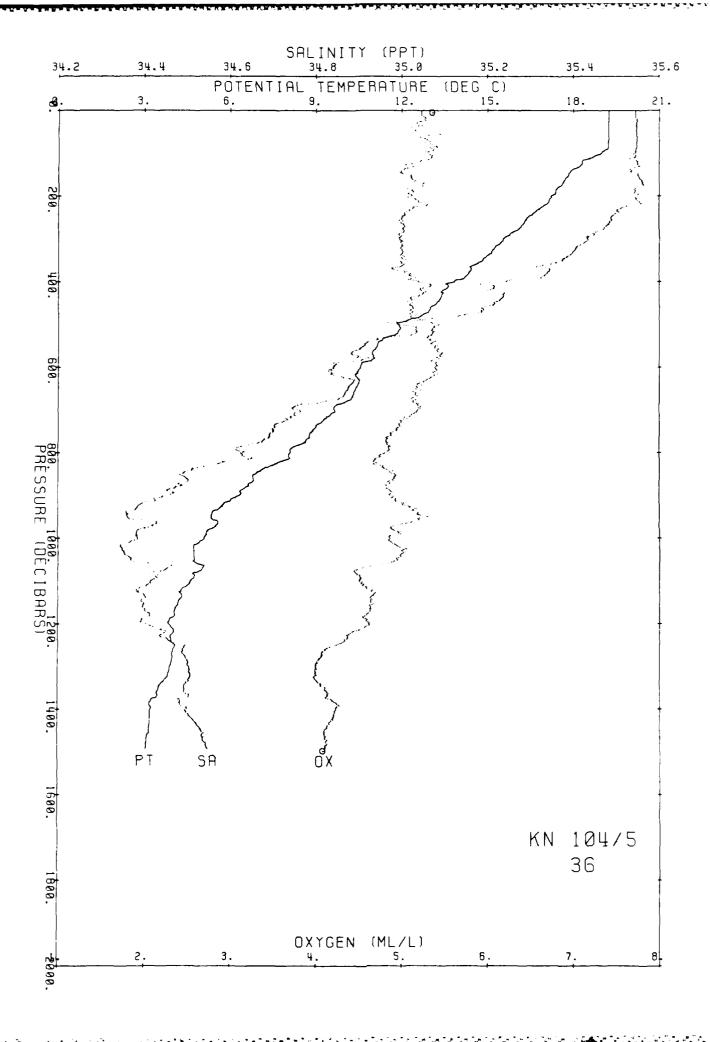


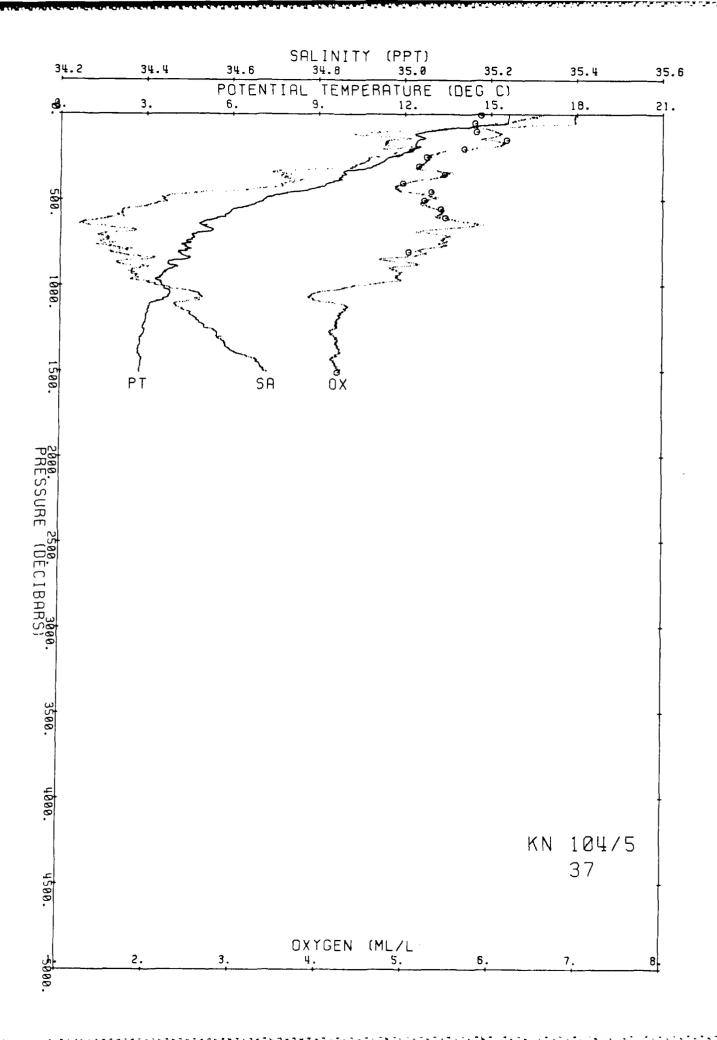


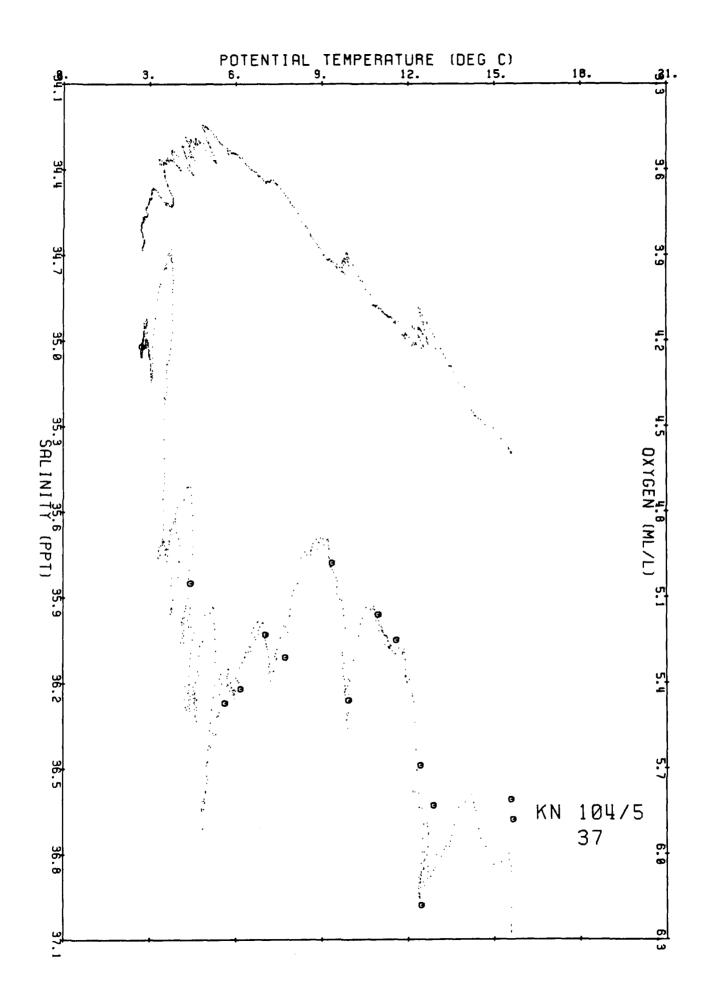
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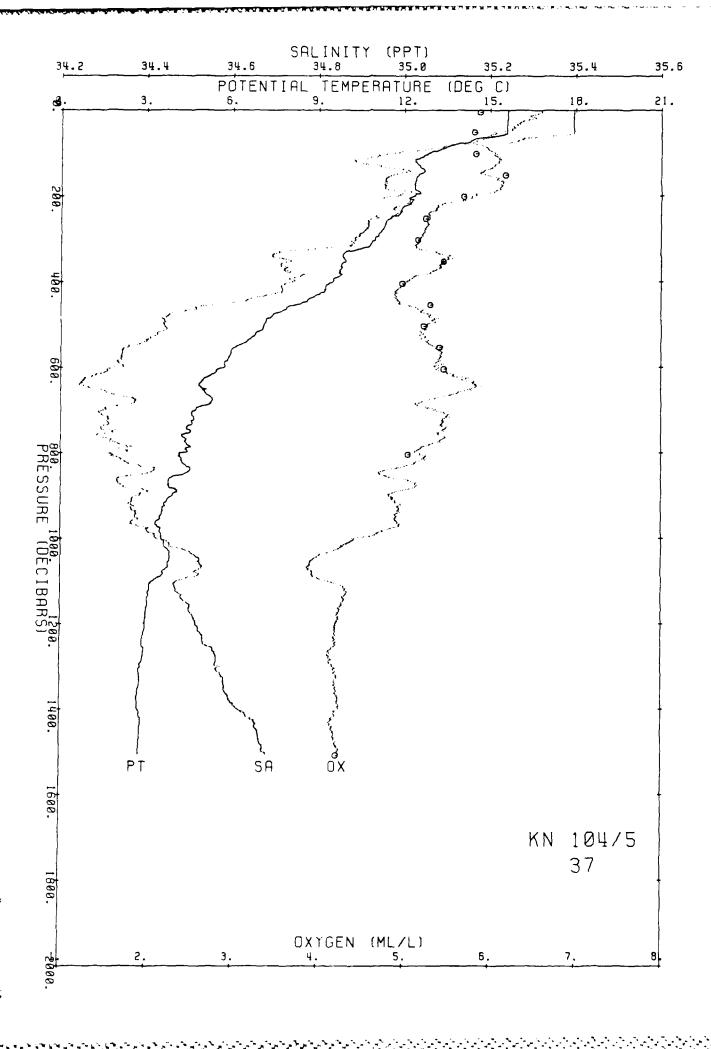












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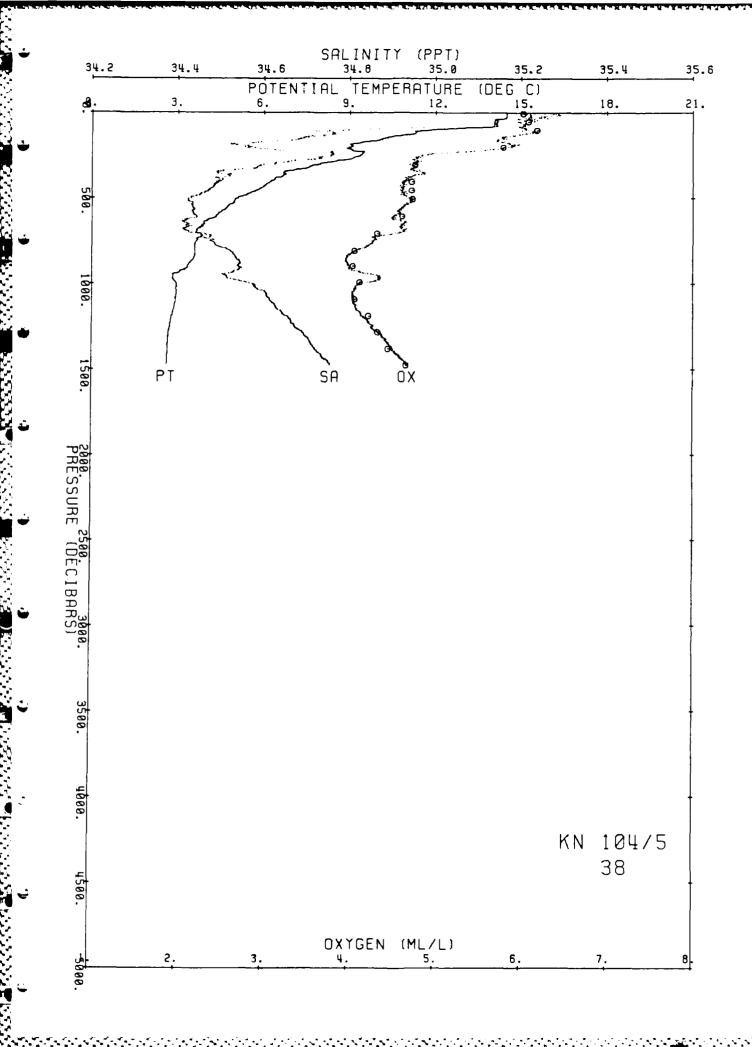
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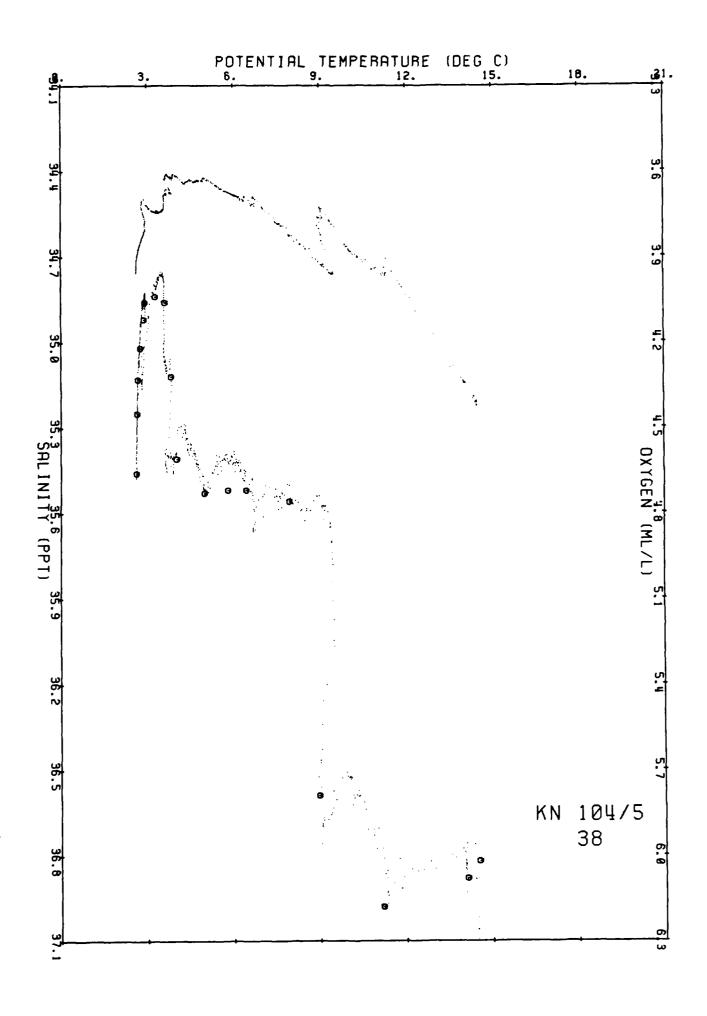
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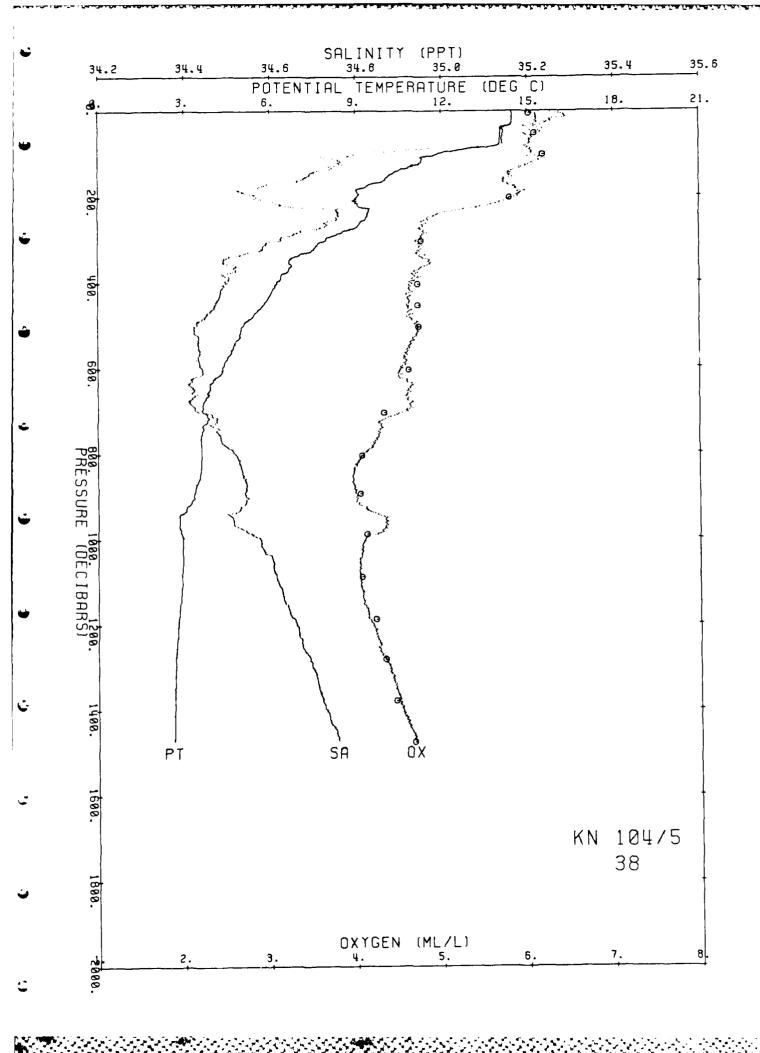
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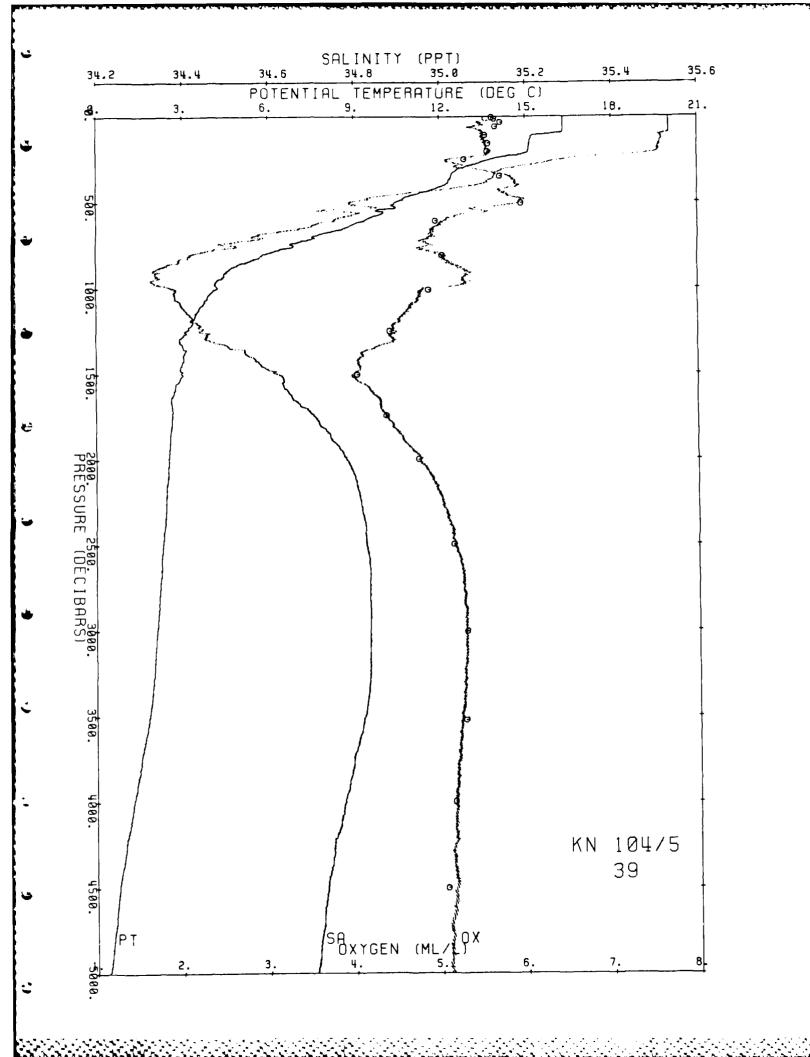
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35.517 5.5 97.3 26.326 30.675 34.928 39.088 43.157 172.7 23 5.26 140 15 196 15.175 35.514 98.0 26.331 30.680 34.933 39.094 43.163 172.9 160 15:183 15:158 35:513 180 15:167 15:140 35:509 5.5 98.0 26.333 30.683 34.937 39.097 43.167 173.3 5.5 98.1 26.334 30.685 34.939 39.099 43.169 173.9 33 41 179.3 200 15 151 15.120 35.508 5.6 99.2 26.338 30.688 34.943 39.104 43.174 174.2 40 1.63 219.1 220 14 923 14 890 35 463 5.6 97.8 26.354 30.709 34.968 39.133 43.208 173.2 240 14.067 14.033 35.317 90.3 26.426 30.798 35.073 39.254 43.344 166.7 239.0 3.45 . 44 5.1 87.0 26.482 30.863 35.147 39.337 43.435 161.8 5.3 89.4 26.523 30.912 35.204 39.401 43.506 158.2 260 13.595 13.558 35.261 3.02 280 13 214 13.175 35.213 . 50 2.61 278.8 300 12.802 12.761 35.161 88.5 26.566 30.963 35.263 39.468 43.581 154.5 2.66 320 12.587 12.544 35.137 5.6 93.1 26.590 30.992 35.296 39.505 43.622 152.6 56 2.00 318 6 340 12 472 12 426 35 129 96.4 26.607 31.011 35.318 39.529 43.648 151.5 .59 1.67 360 12.435 12.387 35.122 97.7 26.610 31.015 35.322 39.534 43.654 151.8 380 12 370 12 320 35 110 98 1 26 614 31 020 35 328 39 542 43 663 152 0 5.9 65 8.2 378 2 400 12.230 12.177 35.083 5.9 98.3 26.620 31.030 35.341 39.558 43.681 151.8 450 11 298 11.241 34.916 500 10.513 10.452 34.789 5.8 94.0 26.667 31.096 35.427 39.663 43.805 147.9 5.9 94.8 26.709 31.156 35.504 39.756 43.913 144.3 1.86 1.78 .83 497.5 550 9 846 9 480 9.782 34,726 5.6 87.5 26.775 31.237 35.599 39.865 44.036 138.5 5.1 79.0 26.859 31.328 35.698 39.971 44.150 131.3 .97 4.9 75.4 26.919 31.406 35.793 40.082 44.276 125.6 1.04 9.412 34.754 600 2 35 596 8 8 736 7.626 8.656 34.676 650 2.11 7.555 34.563 6.890 34.524 4.9 72.8 26.996 31.509 35.921 40.235 44.452 117.6 1.10 4.8 71.3 27.059 31.588 36.015 40.344 44.576 111.4 1.15 700 2.43 696.1 750 6.962 745.7 2.16 800 5.972 5.901 34.424 5.0 72.0 27.110 31.664 36.115 40.467 44.721 105.6 2.09 74.1 27.196 31.784 36.269 40.653 44.938 96.0 1.31 66.4 27.268 31.864 36.357 40.749 45.042 89.6 1.40 900 4.632 4.561 34.333 5 3 1.89 894.4 4.232 34 379 1.58 1000 4.310 4.8 3.694 34.398 3.372 34.436 4.6 63.3 27.338 31.948 36.455 40.860 45.165 4.5 61.2 27.400 32.018 36.533 40.945 45.258 82.5 1.49 76.7 1.57 1100 3.776 1.63 1092.6 1200 3.459 1.49 1191.5 1300 3.003 2.912 34.459 4.5 60.1 27.461 32.091 36.618 41.042 45.366 70.4 1.64 1400 3.146 3.045 34.560 2.993 34.620 4.1 55.2 27.530 32.156 36.678 41.098 45.418 65.2 1.71 53.7 27.583 32.209 36.732 41.153 45.474 61.0 1.77 1 40 1389 3 1500 4.0 3 102 1.30 1488.2 3.7 4.1.383 34.249 36.790 41.218 45.545 4.3 57.6 27.666 32.301 36.832 41.261 45.590 4.4 59.3 27.695 32.301 36.832 41.261 45.590 4.4 6 61.1 27.725 32.361 36.894 41.324 45.654 4.8 63.3 27.752 32.390 36.924 41.356 45.687 2.730 34.646 2.661 34.687 1600 2.844 56.5 1.83 1.31 1586.9 1700 2.783 53.4 1.88 1.13 1685.7 2.757 2.626 34.720 51.2 1.94 1800 .97 1784.3 2.582 34.752 2.523 34.780 1900 2.721 49.0 1.99 98 1883 0 2000 46.9 2.04 .97 1981.5 4.9 65.1 27.771 32.410 36.944 41.377 45.709 5.0 66.4 27.783 32.423 36.959 41.392 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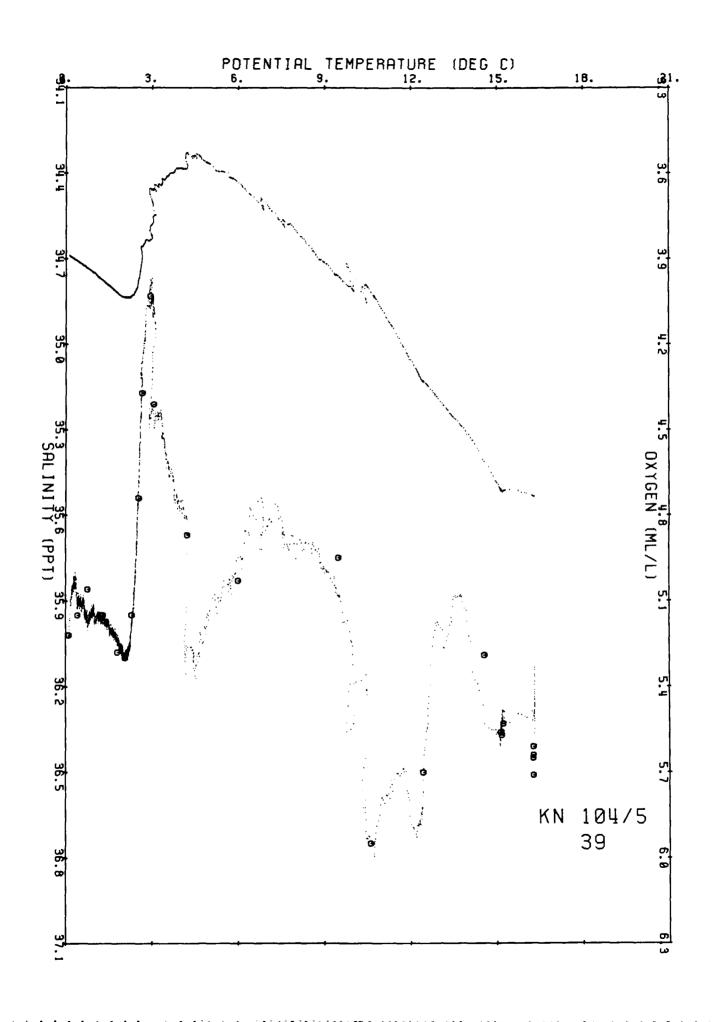
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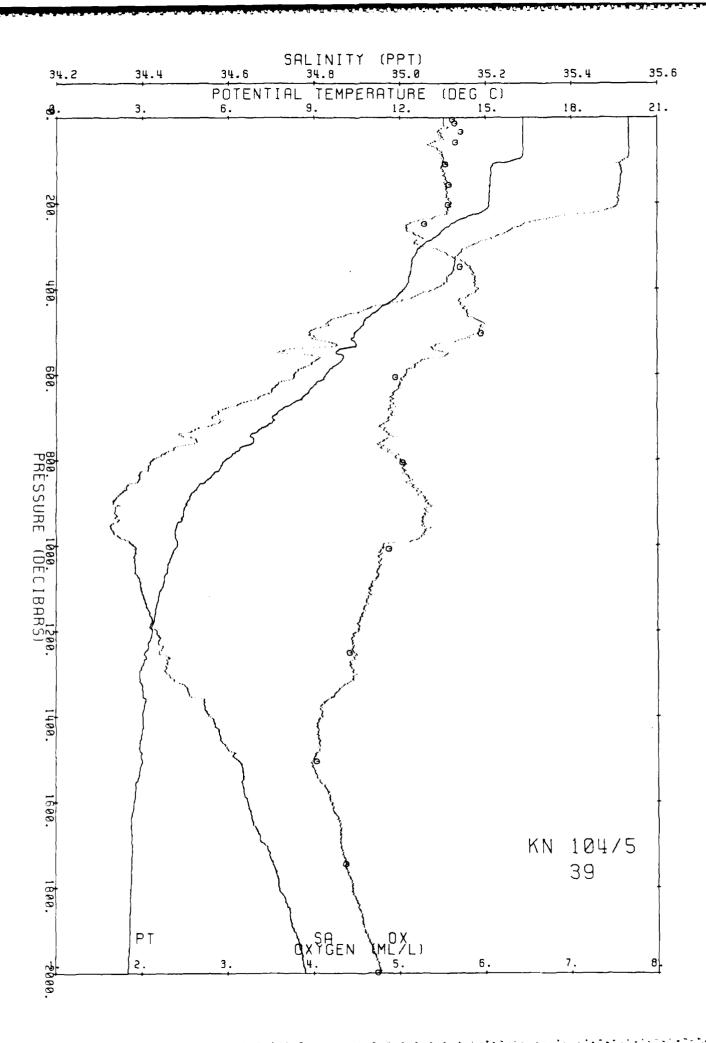
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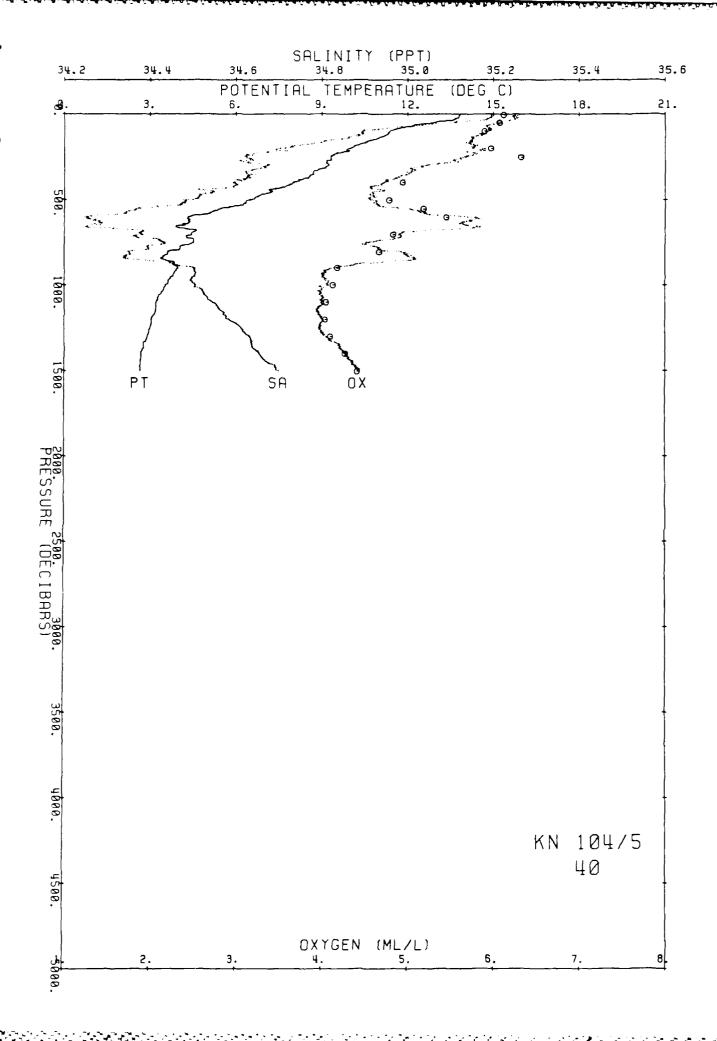
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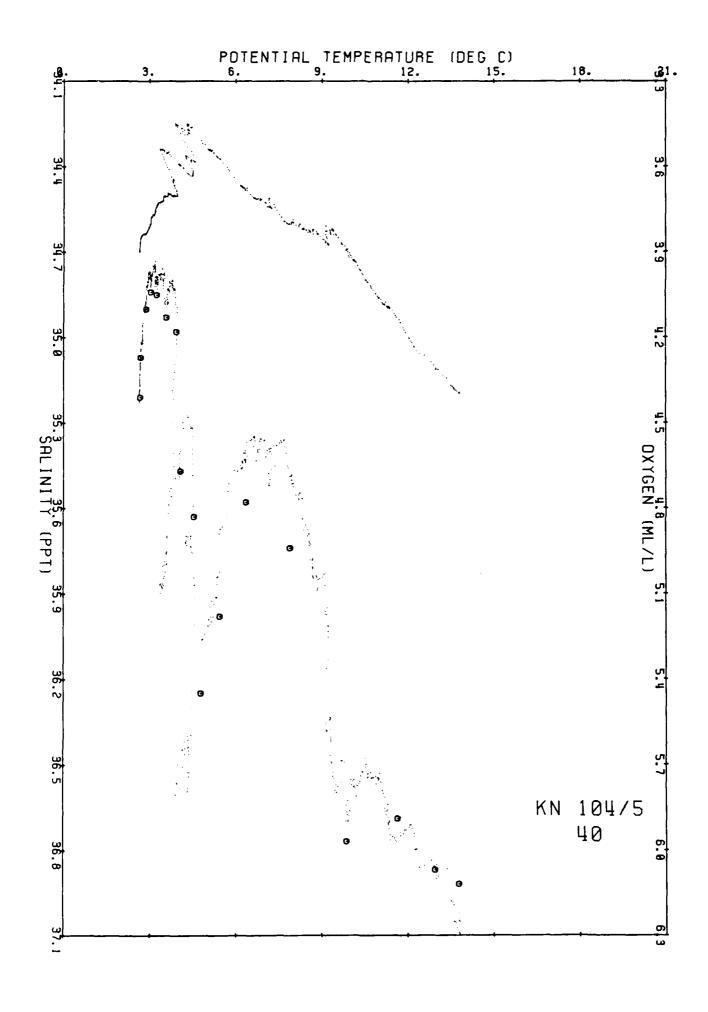


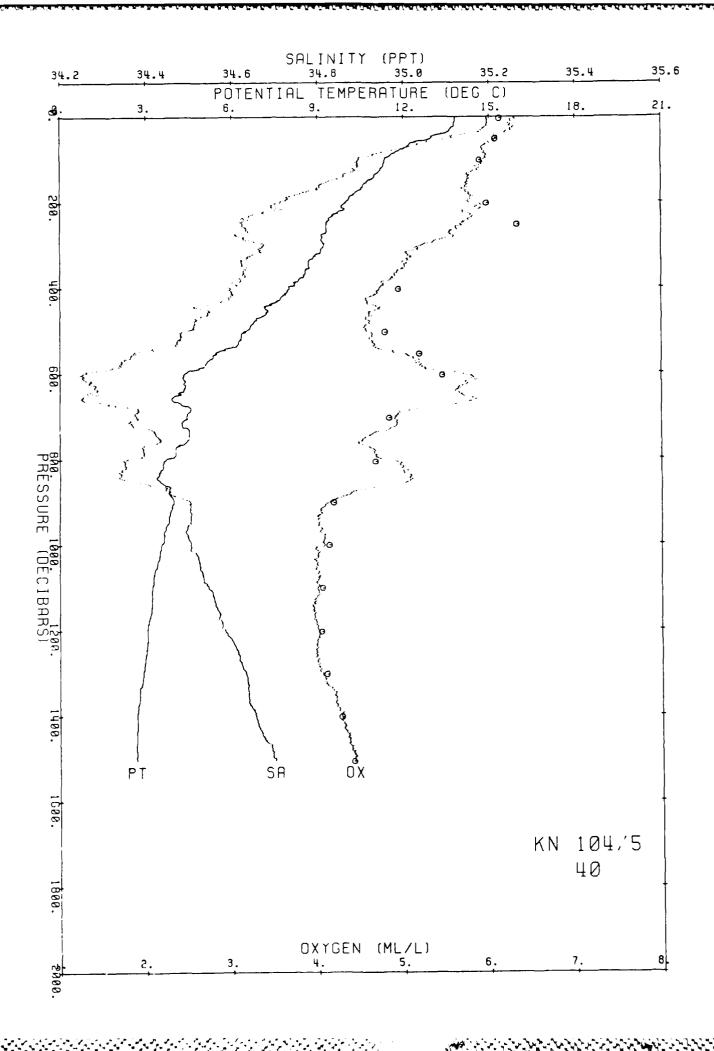




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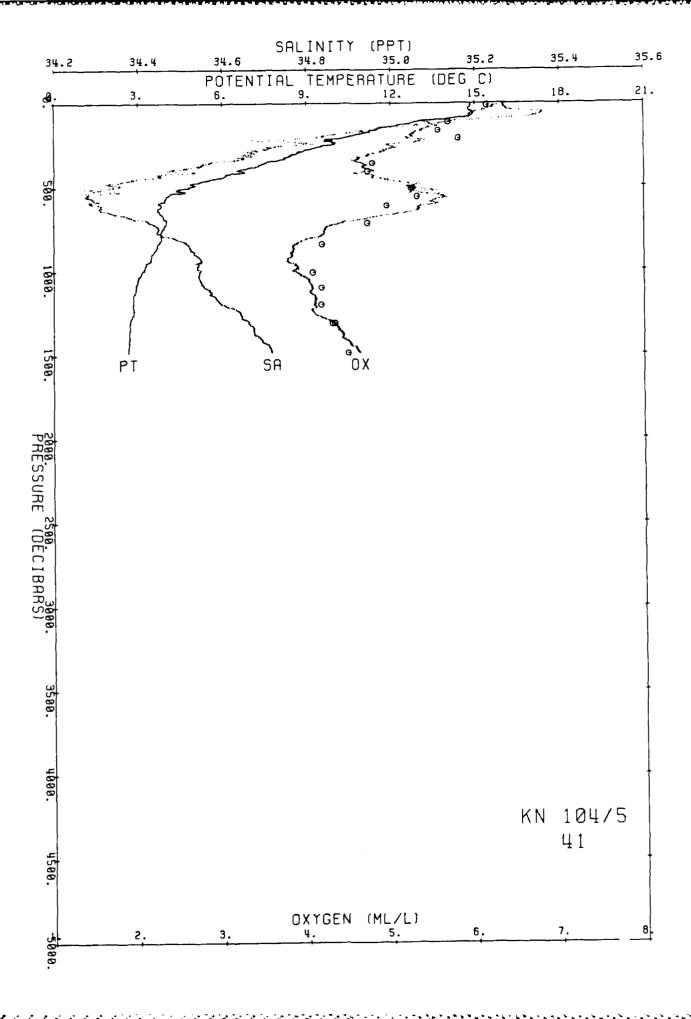
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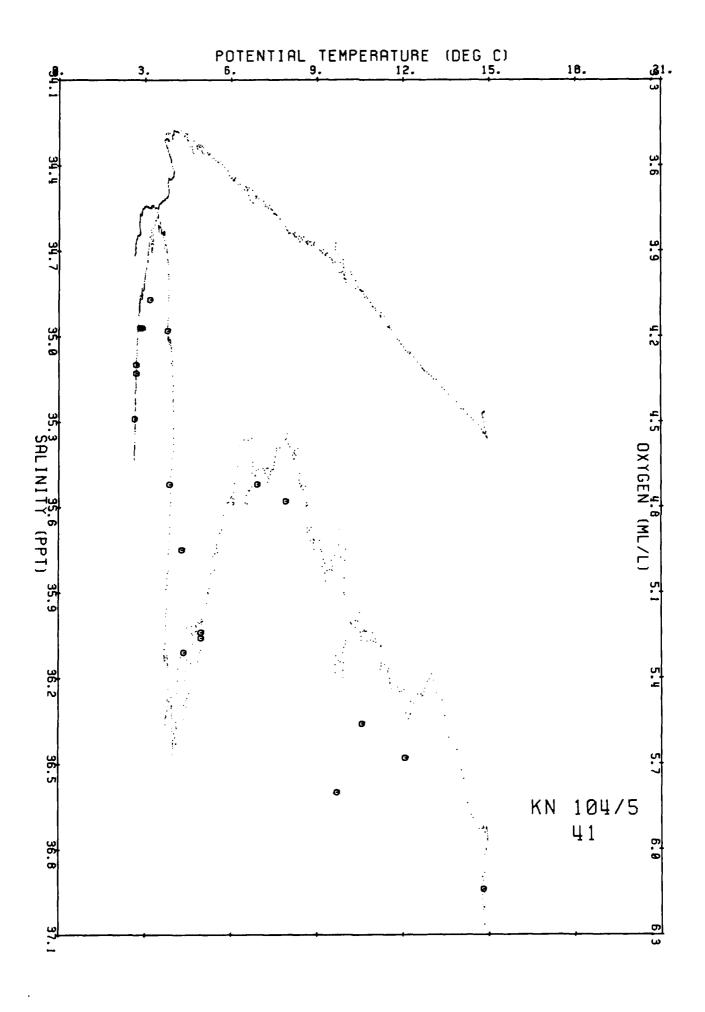
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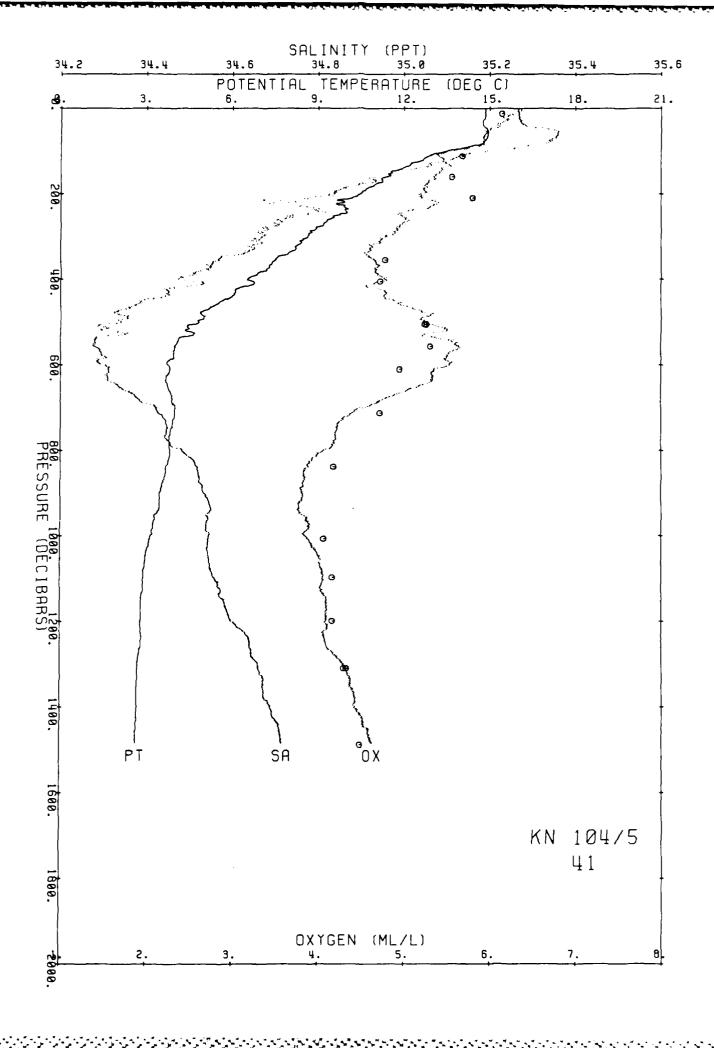
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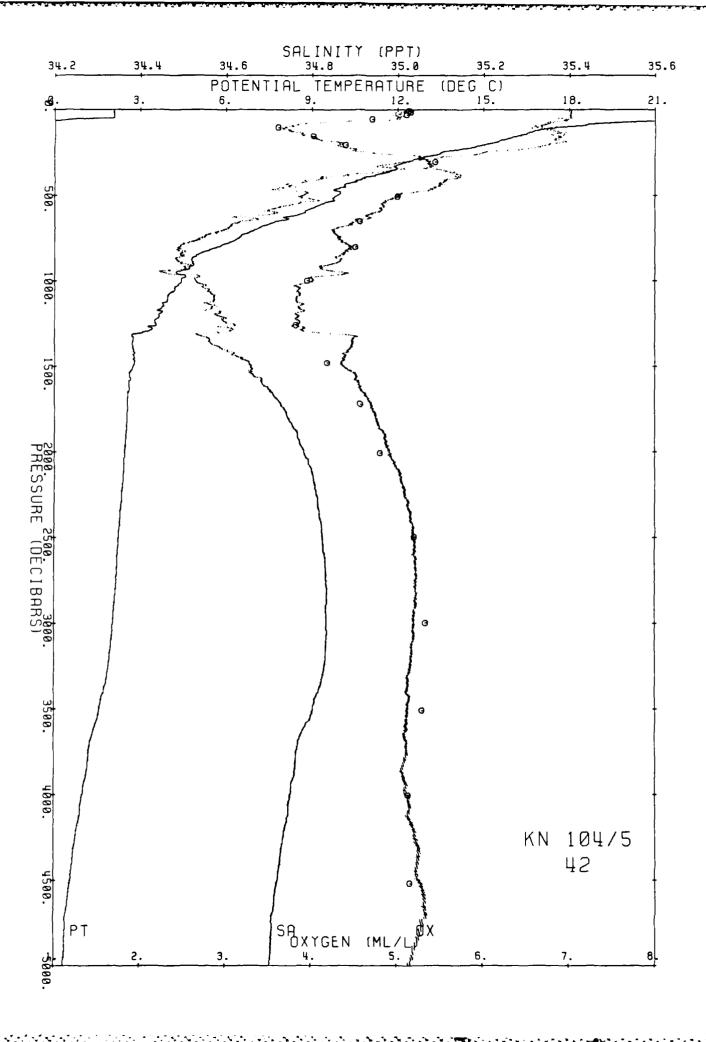
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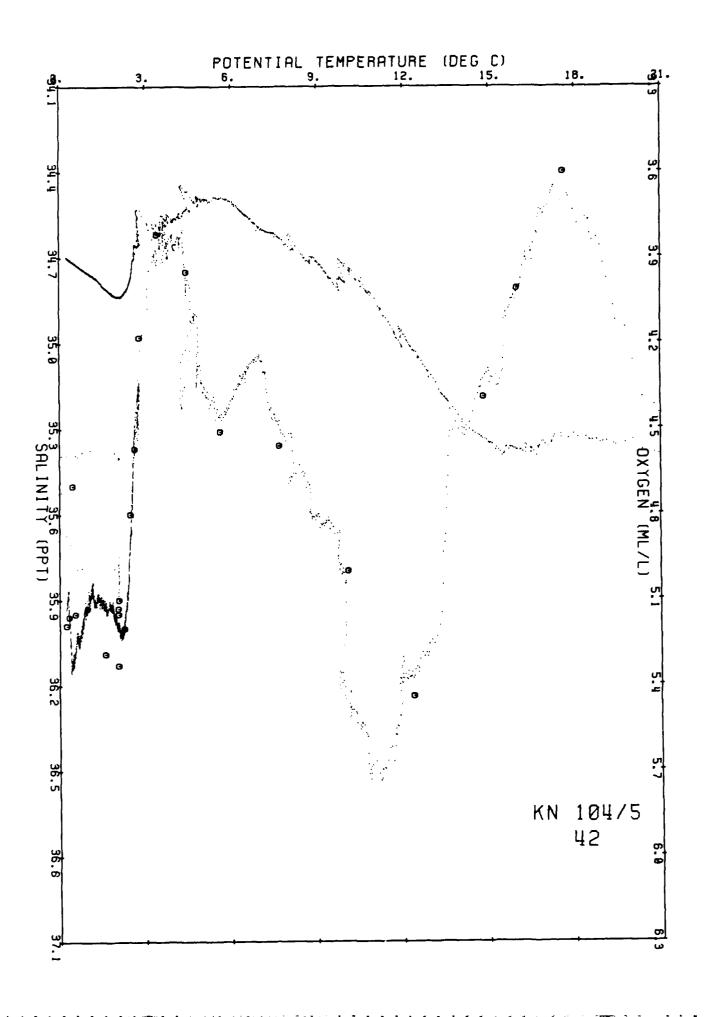


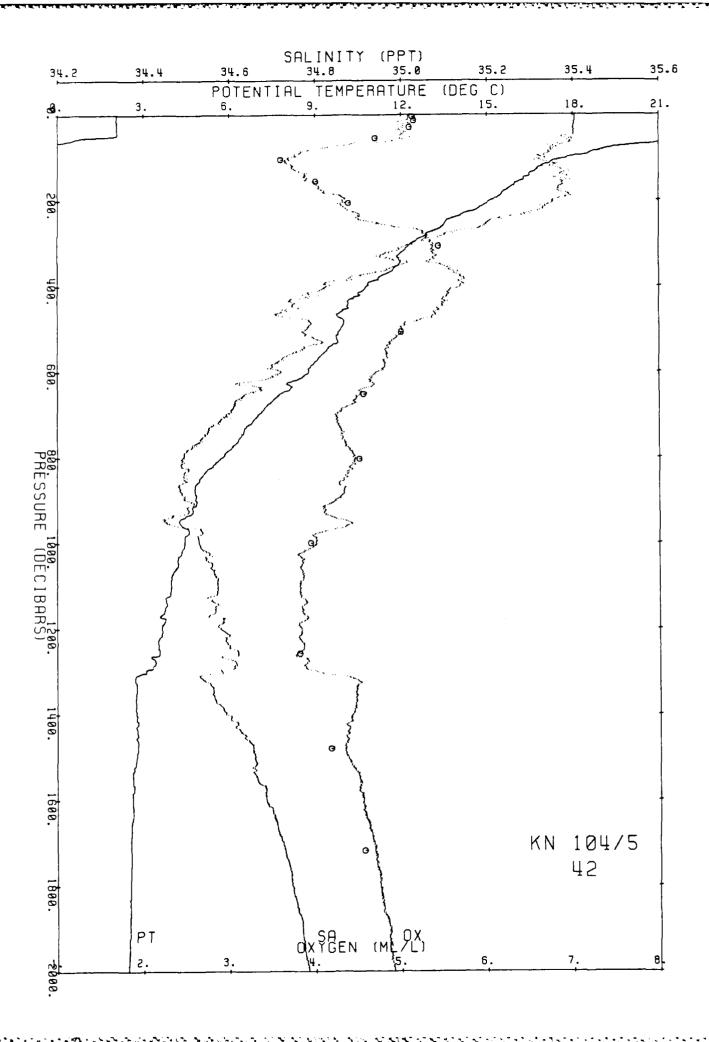


Ship KN Cruise 1045 Station 42 Cast 1 DT .57 S 21 .69 E Start 40 304 83/11/28 a t End 40 5.41 S 21 3.78 E 639 TE OX 05 50 31 52 83 ΗZ DÉ 5.1 104.3 24.221 28.445 32.577 36.619 40.575 369.0 0.00 0.00 0 23.075 23.075 35.405 0.0 10 23.075 23.073 35.405 5.1 104.3 24.221 28.446 32.578 36.620 40.576 369.4 .04 20 23.081 23.077 35.404 5.1 104.6 24.219 28.444 32.575 36.618 40.574 370.0 .07 20.0 5.0 103.0 24.217 28.441 32.573 36.615 40.571 370.7 30 23.086 23.080 35.402 40 23.084 23.076 35.402 5.1 103.8 24.218 28.442 32.574 36.617 40.573 371.0 5.0 102.1 24.246 28.473 32.607 36.651 40.609 368.7 50 22.939 22.929 35.383 .18 49.9 4.9 97.7 24.682 28.931 33 086 37 152 41 130 327.5 4.4 85.8 24.949 29.213 33.383 37.462 41.454 302.5 4.0 75.9 25.257 29.540 33.729 37.828 41.837 273.4 60 21.407 21.395 35.388 70 20.396 20.383 35.377 80 19.141 19.127 35.349 25 9.16 . 28 9.85 3.8 72.1 25.400 29 693 33.892 37.999 42.017 260 1 3.7 68.7 25.578 29.883 34.094 38.212 42.241 243.4 90 18.560 18.544 35.343 100 17.823 17.806 35.336 .33 7 50 99.8 120 16.939 16.919 35.347 68.6 25.801 30.121 34.346 38.478 42.521 222.9 . 38 140 16 499 16 476 35 371 3.9 70.5 25.924 30.251 34.483 38.622 42.672 211.8 4.0 72.1 26.039 30 374 34.614 38.762 42.819 201 5 .42 4.40 139.6 160 16 022 15 997 35 376 46 4 27 159.5 4.1 73.1 26.124 30 466 34.713 38.867 42 931 194 0 4.3 76.4 26.218 30.570 34.825 38.987 43.058 185.5 4.4 76.4 26.293 30.652 34.915 39.085 43.164 178.9 180 15.627 15.599 35.369 200 15.159 15.128 35.355 . 54 3.88 199.4 220 14.723 14.690 35.327 . 58 3 46 219.3 240 13.877 13.842 35.238 260 13.501 13.465 35.191 4.5 77.1 26.405 30.781 35.060 39.245 43.338 168.6 4.9 83.7 26.447 30.830 35.117 39.309 43.409 165.0 .61 239.2 .65 2.62 259.1 280 12.924 12.886 35.101 5.3 89.2 26.495 30.890 35.188 39.391 43.502 160.8 .71 2.69 .74 1.77 300 12 417 12 377 35 027 5.4 89.6 26.538 30.944 35.252 39.465 43.585 156 9 298 9 320 12.110 12.068 34.973 5.4 88.8 26.556 30.968 35.282 39.502 43.628 155.6 318.7 .74 340 11.999 11.955 34.984 360 11.775 11.729 34.967 5.3 88.2 26.586 31.000 35.317 39.538 43.667 153.2 .77 2.20 5.6 91.4 26.616 31.035 35.356 39.581 43.714 150.8 .80 2.21 5.7 93.2 26.642 31.072 35.404 39.639 43.782 148.4 .83 2.19 . 77 358.5 11.278 11.231 34.882 400 10.849 10.800 34.826 450 10.221 10.168 34.762 5.7 92.1 26.677 31.116 35.457 39.701 43.852 145.3 .86 5.4 86.1 26.738 31.191 35.545 39.802 43 966 140.2 .93 2.44 398 3 .93 2 05 448.0 5.0 79.1 26.798 31.257 35.616 39.879 44.047 135.4 1.00 4.8 75.4 26.868 31.337 35.707 39.980 44.158 129.3 1.07 4.7 72.8 26.935 31.419 35.802 40.089 44.280 123.3 1.13 9.957 9.899 34.780 9.476 9.413 34.766 500 550 2.1A 547.3 8.846 8.781 34.721 4.5 68.1 27.017 31.523 35.928 40.235 44.447 115.2 1.19 4.2 62.7 27.097 31.623 36.047 40.373 44.602 107.2 1.25 4.3 63.0 27.136 31.675 36.113 40.452 44.694 103.4 1.30 650 7.891 7.825 34.639 7.075 7.007 34.593 2.45 646.6 700 2.42 696.2 6.506 6.436 34.544 750 5.817 5.747 34.494 4.5 63.9 27.185 31 741 36.196 40.551 44.808 98.3 1.35 4.914 4.841 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32.597 36.640 40.596 13.6 29 23.068 23.062 35.427 5.10 4.9 0.17 1.2 0.01 24.241 28.466 32.597 36.640 40.596 29.2 54 21 460 21 449 35 406 4 70 4.3 0.29 2.1 0.14 24.681 28.929 33.083 37.148 41.125 53.8 104 17.626 17.608 35.349 3.60 8.0 0.82 8.2 0.07 25.637 29.945 34.158 38.280 42.312 155 16.014 15.989 35.375 4.01 9.6 0.82 10.3 0.03 26.039 30.375 34.616 38.763 42.820 153.4 206 14 847 14.816 35.352 4.39 7.5 0.81 8.6 0.02 26.285 30.642 34.903 39.070 43.146 306 12.416 12.375 35.037 5.44 6.1 0.82 9.9 0.01 26.546 30.952 35.260 39.473 43.593 407 11.226 11.175 34.921 26.683 31.114 35.446 39.683 43.826 507 10:145 10:085 34:848 5:00 8.6 1.28 13.9 26.819 31.273 35.629 39.887 44.052 652 7.747 7.681 34.645 4.56 18.0 1.84 20.4 27.043 31 552 35.960 40.271 44.485 803 5.687 5.617 34.497 4.51 27.2 2.22 23.7 27.203 31.763 36.221 40.579 44.839 1000 4.510 4.430 34.539 3.95 47.4 2.56 30.4 27.374 31.963 36.450 40.836 45.123 989.6 1257 3.514 3.421 34.606 3.82 57.7 2.67 30.6 27.531 32.146 36,658 41.068 45.379 1243.4 1479 2.914 2.809 34.647 4.18 46.0 2.55 22.8 27.621 32.252 36.780 41.205 45.530 1461.8 1718 2.753 2.629 34.726 4.57 45.1 2.33 22.6 27.700 32.335 36.867 41.296 45.625 1697.8 2007 2.637 2.490 34.783 4.80 42.3 2.18 20.9 27.758 32.396 36.931 41.364 45 696 1981 4 2497 2.453 2.264 34.830 5.20 52.1 25.7 27.814 32.459 37.000 41.437 45 775 2463.3 1998 2.292 2.057 34.841 5 33 55.1 1.97 25.8 27.840 32 490 37.036 41.480 45 822 2954.3 3510 1.868 1.591 34.810 5.29 45.2 2.10 16.7 27.851 32.515 37.074 41.530 45.884 3454.3 4003 1 275 0.961 34.754 5.13 77.6 2.31 24.6 27.851 32 533 37.110 41.583 45.954 3935.3 4518 0.912 0.553 34.723 5.15 79.2 2.43 25.1 27.851 32.546 37.135 41.619 46.001 4436.4 5003 0 740 0.331 34.707 5.16 104.3 2.51 31.9 27.852 32.553 37.148 41.639 46 027 4907 6 27.852 32 555 37.153 41.647 46 037 5065 5 5166 0.670 0.244 34.701 5 19 100.2 2.51 31.2

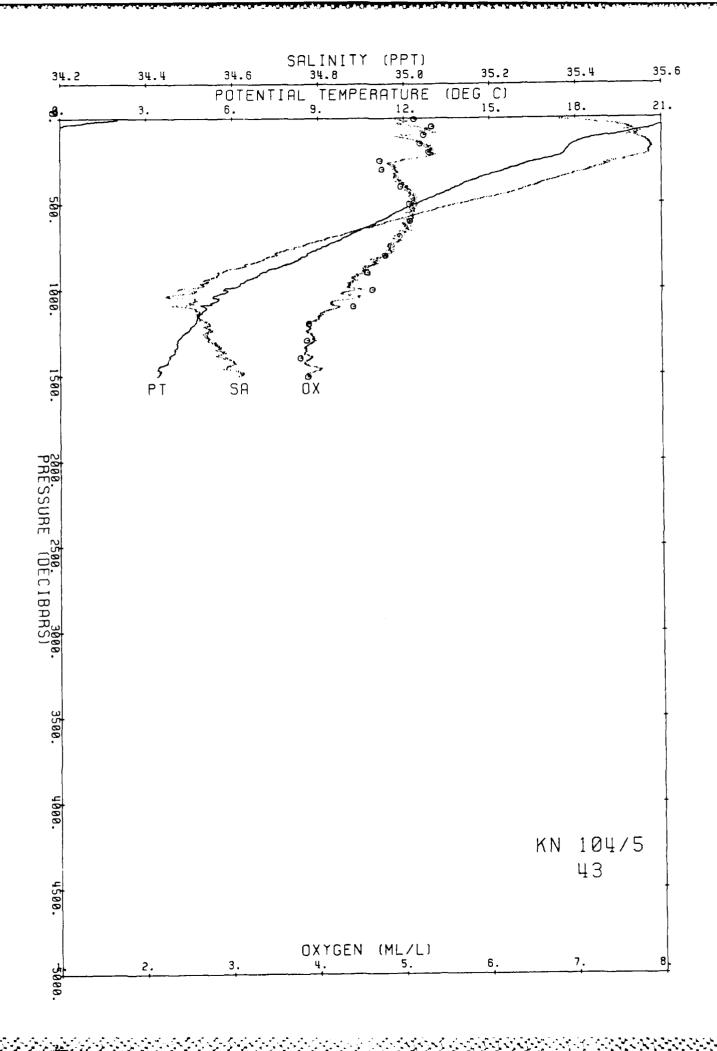


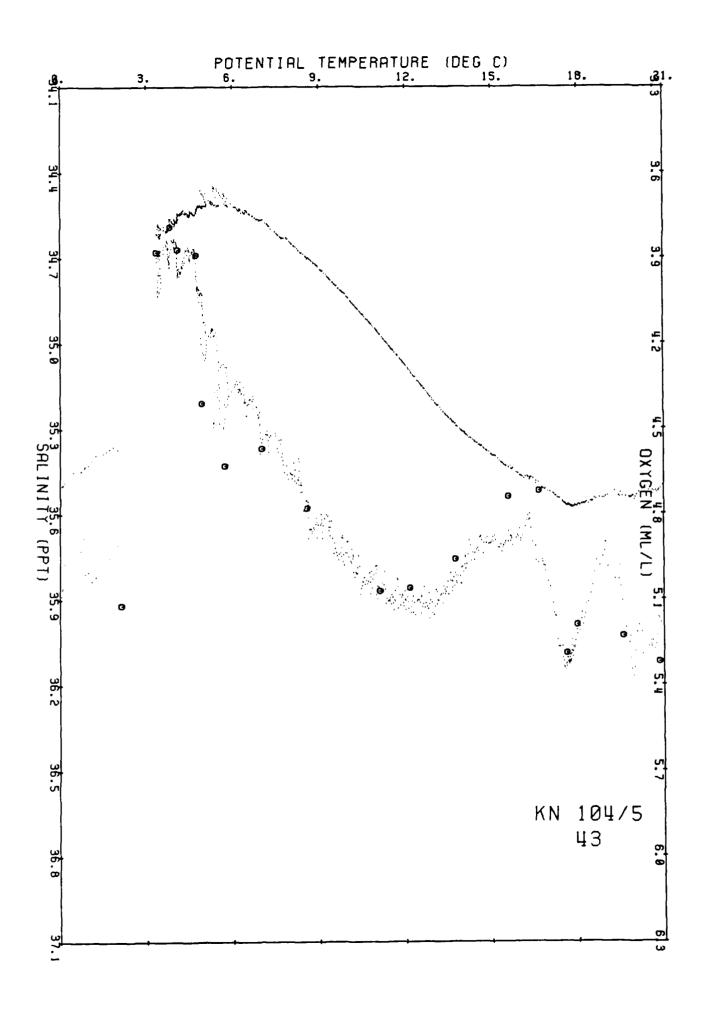
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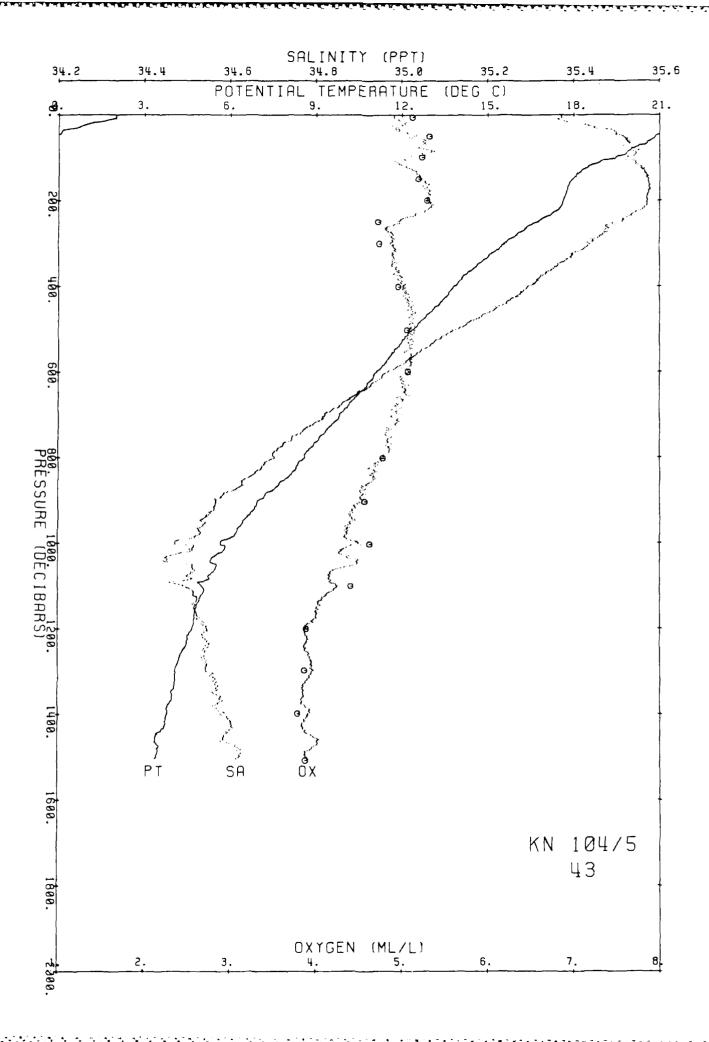




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PR	TE	PT	SA	ox os	so	S1 S	32 53	S4	AN HZ	BV DE	
	22 996								369.3 0.00		
	22 849					28.482 32.					
	12.103					28.741 32.					
	21 722					28.883 33.					
40	21.104	21 096	35.499			29.101 33.					
50	20.861	20.851	35.516	5.2 102.0	24.929	29.184 33.	347 37 4	19 41.404	303.6 .17	5.00 49.9	
	20.678					29.243 33.				4.20 59 9	
	20 489					29.294 33.					
	20 028					29.443 33.					
	19 848 19 478					29.495 33. 29.595 33.					
	18 535					29.864 34					
	18 110					29,987 34.					
160	17.871	17.844	35.576			30.056 34.					
180	17.778	17.748	35.574	5.3 98.7	25.775	30.080 34.	289 38.40	07 42.436	227.7 .50	1.87 179 4	
	17 671					30.107 34.				2.01 199 4	
	17.526					30.136 34.					
	17.004					30.242 34					
	16.433					30.351 34. 30.434 34.					
	15.647					30.517 34.					
	15.277					30.585 34					
	14.877					30.660 34.					
360	14 533	14.479	35.352	4.9 86.0	26.358	30.721 34.	988 39.10	61 43 243			
	14.152					30.785 35.				3.06 378.5	
	13 890					30.827 35.					
	13 189						-		161.7 1.02		
	12.478								155.4 1.10		
	11.197								145.7 1.25		
	10 600	-							141 1 1 32		
700	9.919		34.821						135.8 1.39		
750	9.235	9.151	34.746	4 8 75.3	26.895	31 371 35	746 40.0	25 44.208	130.7 1 46	2.03 746.0	
800	8 709		34.704						126.0 1.52		
900	7.102		34.567						112.6 1 64		
1000	5.784		34 . 474						101.8 1 75		
1100	5.127 4.795		34.491 34.547			31.842 36. 31.933 36.					
1300	4.206		34.546			32.012 36					
1400	3.922		34.580			32.077 36					
1500	3 560	3.446	34.622	3 9 52.9	27.541	32.156 36.	667 41.0	76 45 386	66.5 2.17	1.61 1488.6	
1505	3.498	3.384	34.616	3.9 53.1	27.543	32.159 36.	671 41.0	82 45.394	66.2 2.17	1.52 1493.5	
PR	TË	PT	SA	02 SI	PO	N3 N2		50 51		S3 S4	DE
	23.126 22.874			5.12 4.6 4.7		1.0 0.01				6,593 40,548 6,662 40,621	4.9
	21 739			5.2		1.1 0.01				7.093 41.066	13.5 25.2
	20.850	_			0.17	0.9 0.01				7.429 41.414	49.8
	19.594	-				1.7 0.13				7.846 41.848	97.8
	18.004				0.29	3.2 0.01	25	.721 30.0	21 34.227 3	8.342 42,367	148.0
	17.654					3.2					197 7
	16.689					5.7					247.7
	15.634 14.581			4.74 6.6	0.59	8.1					298.1 347.9
	13.788			4.96 5 5	0.74	8 4					347.9
	12.957				0.84						448.0
	12.219				0.93						497.3
	11.759			7.3	1.02	14.3	26	.681 31.1	00 35.422 3	9.648 43.781	546.8
	11.184										594.0
701		9.804		9.2							694.2
802			34.697								794.0
1002	7.096 5.816		34.571							10.356 44.585 10.539 44.797	
1101			34.480							10.539 44.797 10.697 44.973 1	
1301			34.541							0.781 45.061 1	
1298			34.551							0.907 45.201 1	
1398	3.931		34.584	3.79 53.4	2.66		27	.474 32.0	79 36.580 4	0.981 45.282 1	382.9
1508	3.460	3.346	34.608	3.88 53.9	2.66	31.3	27	.540 32.1	57 36.671 4	1.083 45.395 1	491 3







so PR ox Sl S2 S3 AN ΗZ 0 19.757 19.757 35.491 5.5 106.2 25.202 29 474 33 653 37.741 41.741 275.6 0 CO 0 00 0.0 10 19.731 19.729 35.493 5.5 105 5 25.210 29 484 33.663 37 751 41.752 275 1 10 0 0.3 1 65 20 19.418 19.415 35.482 5.6 108 2 25.284 29.562 33.746 37.839 41.844 268.5 .05 30 19.142 19.137 35.476 5.7 108 7 25.351 29.634 33.822 37.920 41.928 262 5 0.8 40 18.504 18.497 35.465 5.8 109 3 25.505 29.798 33.997 38.104 42.122 248 2 1.1 50 18 434 18 425 35 473 5.7 107 4 25.530 29.824 34.023 38.131 42 150 246.3 1.3 60 18.197 18.197 35.466 5.6 105.6 25.584 29.882 34.085 38.197 42.220 241.5 16 70 17.629 17.617 35.423 5.6 104 6 25 691 29.999 34.212 38.332 42.364 231.6 .18 80 16.473 16.461 35.382 97 1 25 936 30 263 34 496 38 635 42 685 208 6 . 20 90 15.682 15.668 35.366 96.3 26.106 30.447 34.693 38 846 42.908 192.7 100 14.957 14.942 35.346 94 7 26.252 30.607 34.866 39 031 43.105 179 0 120 14.073 14.056 35.269 5.4 92 6 26 384 30 756 35 031 39 212 43 301 166 9 140 13.411 13.391 35.173 5.4 92.2 26.448 30.833 35.121 39.314 43.416 161.3 . 31 160 13.087 13.065 35.158 5.4 90.9 26.503 30.894 35 188 39.388 43.495 156.6 180 12.727 12.703 35.118 5.4 90.0 26.544 30 943 35 244 39 451 43 565 153 1 . 37 200 12.199 12.173 35.034 5.5 90 6 26.583 30 993 35.305 39.521 43.645 149.8 199 220 11.898 11.869 34.993 5.4 89.6 26.609 31.025 35.344 39 566 43.696 147 8 . 43 2.08 219 240 11.424 11.394 34.921 5.4 88.1 26 642 31.069 35.397 39.529 43 768 144 9 2 36 239.0 260 11.007 10.975 34.853 5.5 89 0 26.666 31.101 35.438 39 679 43 827 143.0 49 2.01 258 280 10.500 10.467 34.777 5.7 90.5 26.697 31.144 35.492 39.743 43.901 140.2 278.8 .52 2.32 300 10.185 10.150 34.736 5 6 89.2 26.721 31.174 35 529 39.787 43.951 138.3 1 99 298 . 54 .57 2.10 320 9.803 9.766 34.685 5.6 88.1 26.746 31.208 35.571 39.837 44.009 136.1 318 6 340 10.504 10.464 34.885 5.2 82.7 26.782 31.228 35.575 39.826 43.983 133.6 . 60 2.19 338 358 3 360 10.269 10.227 34.873 4.8 76.7 26.814 31.265 35.617 39.873 44.034 130.9 .63 2.30 9.772 . 65 380 9.728 34.803 4.8 76 1 26 845 31 307 35 670 39 936 44 108 128 1 2.33 378 9 507 9.561 34.786 4 8 75.5 26.859 31.325 35.692 39.961 44 136 127.0 .68 400 1 59 198 8.820 34.705 4.7 73.1 26.916 31.399 35.782 40.068 44 258 122.0 450 8.868 .74 2 01 447.8 8 214 8.162 34.675 4.5 68.4 26.995 31.493 35.890 40.190 44.394 114 9 . 80 500 2 31 497 5 7.625 7.570 34.629 4.4 66.5 27.046 31 558 35.969 40 282 44 499 110 3 550 .85 1 92 547 1 600 6.996 6 939 34.573 4.4 64.2 27 091 31 618 36.044 40 372 44.602 105 1 . 91 1.84 596 8 5.964 5.907 34.442 4.8 69.3 27.124 31 677 36.128 40.480 44 734 102.2 650 1 75 96 646 6 006 700 5.944 34.514 4.4 63 4 27 176 31 727 36 177 40 528 44 780 98.1 1.01 1 79 696.0 750 5.675 34.519 4.2 60 7 27 213 31 772 36 228 40 584 44 843 5.740 94 8 1 06 1 63 745 6 5 044 34.513 4.2 900 5 110 59 8 27 284 31 858 36 330 40 701 44 974 87.7 1 10 795.2 2 28 900 4.461 4.390 34.523 4 0 55.3 27 366 31.956 36.444 40.831 45.119 79.8 1.19 1 73 894 1000 4.018 3 942 34.585 3.8 52.8 27.462 32 064 36.563 40.960 45.258 70.8 1.26 1.83 993.4 3.591 3.510 34.627 50.5 27.539 32.152 36.661 41.049 45.377 1100 63.4 1.33 1 66 1092 1200 3.192 3.107 34.646 52.9 27.593 32 216 36.736 41.154 45.472 1 43 1191.4 58.1 1.39 1300 3.082 2.989 34.676 4.0 53.2 27.628 32.254 36.776 41.197 45.518 55.3 1.45 1.09 1290.3 1400 2.901 2.803 34.703 4.2 56 1 27 666 32 297 36 824 41 250 45 575 51.8 1.50 1.18 1389.1 58.3 27 691 32 325 36.855 41.283 45.610 1500 2.800 2.694 34.722 4 4 49.8 1.55 95 1487 2.799 2.693 4.4 1501 34.723 58 3 27.692 32.326 36.856 41.283 45.611 49.7 1.55 -9 99 1488 PR TE SA 02 SI PO N3 N 2 NH4 so S1 S 2 S 3 DE 5 19.851 19.850 35.485 5.48 3 4 0 20 0.8 0.01 0.20 25.173 29.444 33 621 37 708 41 707 4 8 12 19.627 19.625 35.482 2.8 0.21 0.8 0.01 25.229 29.504 33.685 37 775 41.777 12.0 27 18.730 18.725 35.475 2 7 0.21 0.8 0.02 25.455 29.745 33 939 38 043 42 058 26.8 52 18.327 18.318 35.495 5.74 4.5 0.01 0.19 1.1 25.573 29.869 34.070 38.180 42.200 51.5 5.9 0.54 6.6 102 15.148 15.132 35.368 5.22 0.13 26.227 30.579 34.834 38 995 43 066 5.3 0.66 7.8 0.03 152 13.520 13.499 35.191 5.44 26.440 30.823 35.109 39.300 43.400 150 8 10.0 202 12.478 12.451 35.079 5.39 0.01 26.564 30.968 35.274 39.485 43.604 1.00 13.4 252 11.306 11.274 34.903 5.45 6.3 26.650 31.079 35.410 39.645 43 786 249 9 302 10.404 10.368 34.789 5.49 6.9 1.12 14.7 26.724 31.173 35.523 39.776 43.935 353 10.451 10.409 34.882 4.94 26.790 31.237 35.585 39.837 43.995 350.1 404 9.641 9.595 34.790 4.91 26 857 31.322 35.688 39.957 44.131 454 8.887 8.838 34.705 4.81 1.56 22.2 26.913 31.396 35.779 40.064 44.254 26.996 31.494 35.892 40.192 44.396 504 8.198 8.146 34.673 4.62 1.78 22.7 554 7.635 7.580 34.630 4.53 16.3 1.90 16.7 27.045 31.557 35.968 40.281 44.497 2.03 14.7 604 6.984 6.926 34.573 4.51 16.2 27.093 31.620 36.047 40.374 44.605 653 5.867 5.810 34.431 27.127 31.683 36.136 40.490 44.747 20.3 2.12 23.7 813 5.080 5.013 34.509 4.26 27.285 31.859 36.332 40.704 44 978 36.9 2.41 29.1 914 4.347 4.276 34.515 37.4 2.61 23.8 27.371 31.965 36 456 40.846 45.136 905 1013 3.912 3.836 34.564 3.96 33.5 2.67 18.5 27.456 32.061 36.563 40.963 45 264 1002 9 1100 3 598 3.517 34.626 56.3 2.74 29.7 27.538 32.150 36.659 #1.067 45 375 1088 1177 3.295 3.210 34.644 3.84 49.4 2.69 23.4 27 581 32.202 36.719 41 134 45 450 1164 1271 3.079 2.989 34.666 64.8 2 66 31.8 27.620 32.246 36.769 41.189 45 510 1257.1 2.58 15.0 1 799 2.900 2.801 34.701 4 13 34.6 27 665 32.296 36.823 41.248 45 573 1383 5

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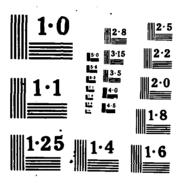
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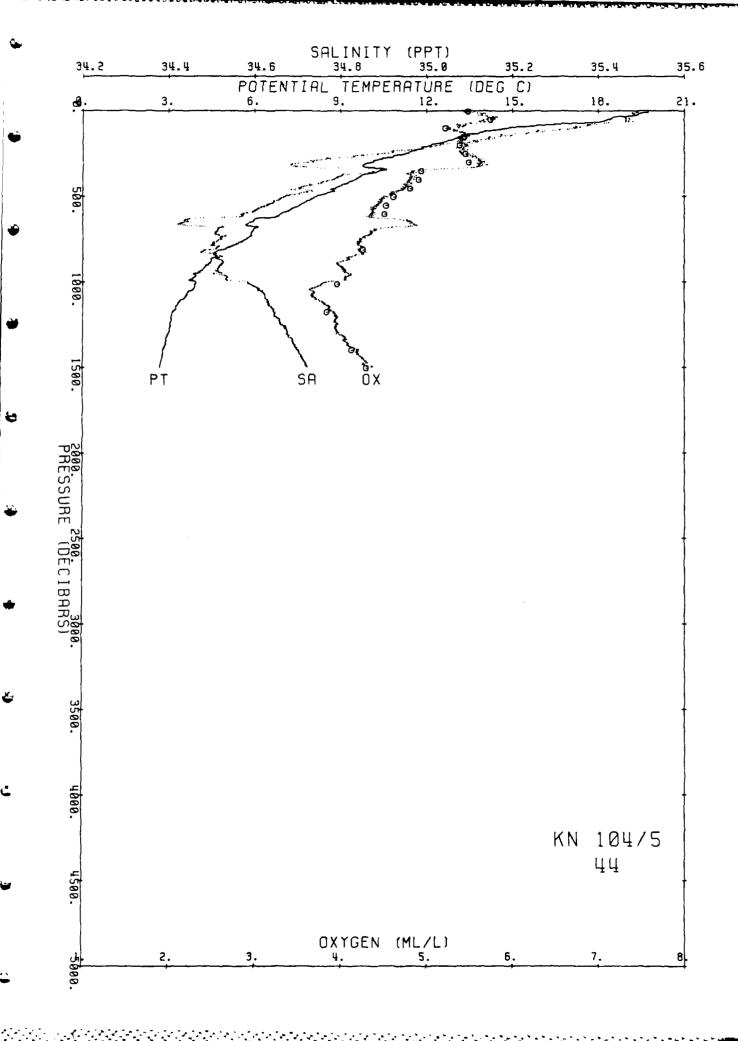
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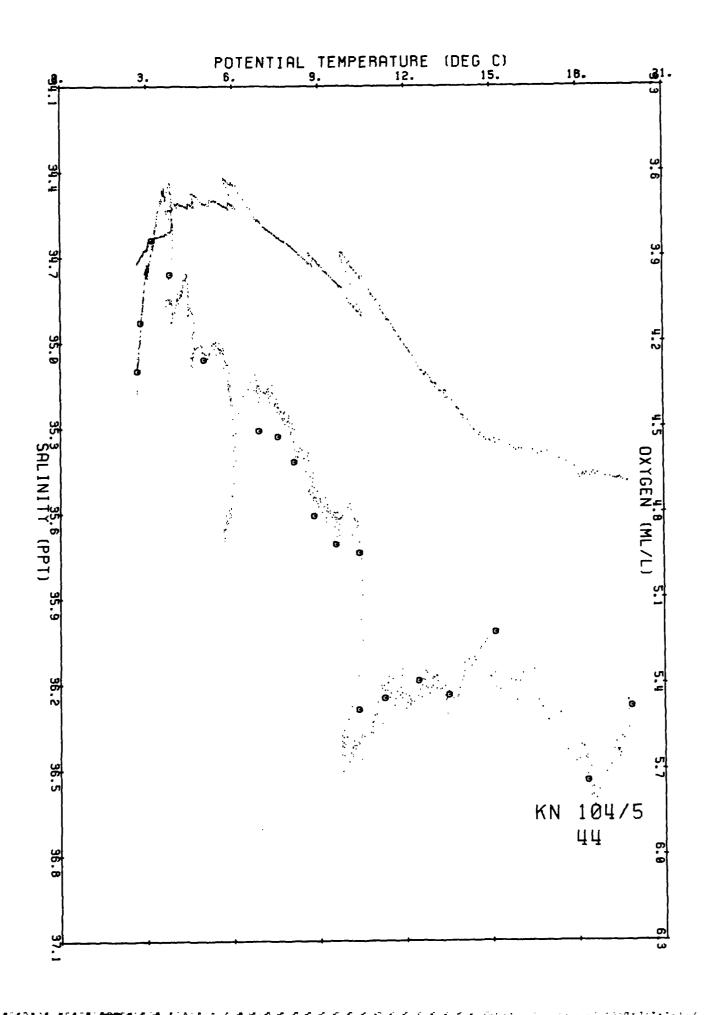
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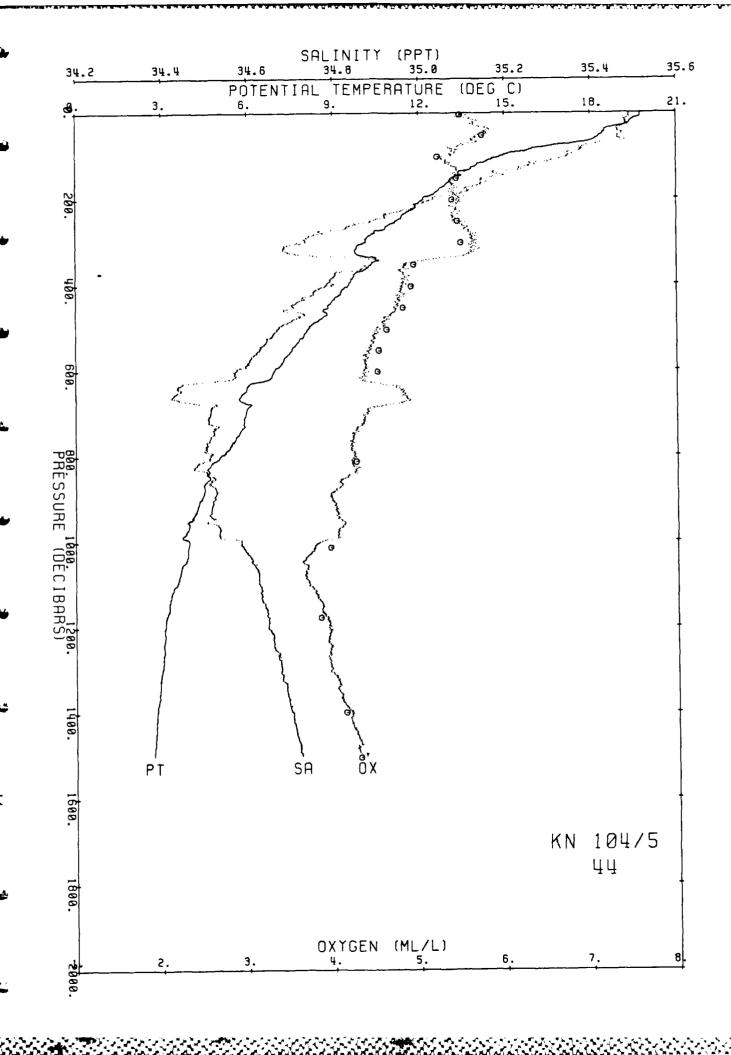
AGULHAS RETROFLECTION CRUISE NOVEMBER-DECEMBER 1983 HYDROGRAPHIC (CTD) DATA(U) LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES NY D B CAMP ET AL. FEB 86 LDGO-86-1 N00014-84-C-0132 F/G 8/1 AD-A168 163 3/5 UNCLASSIFIED NL



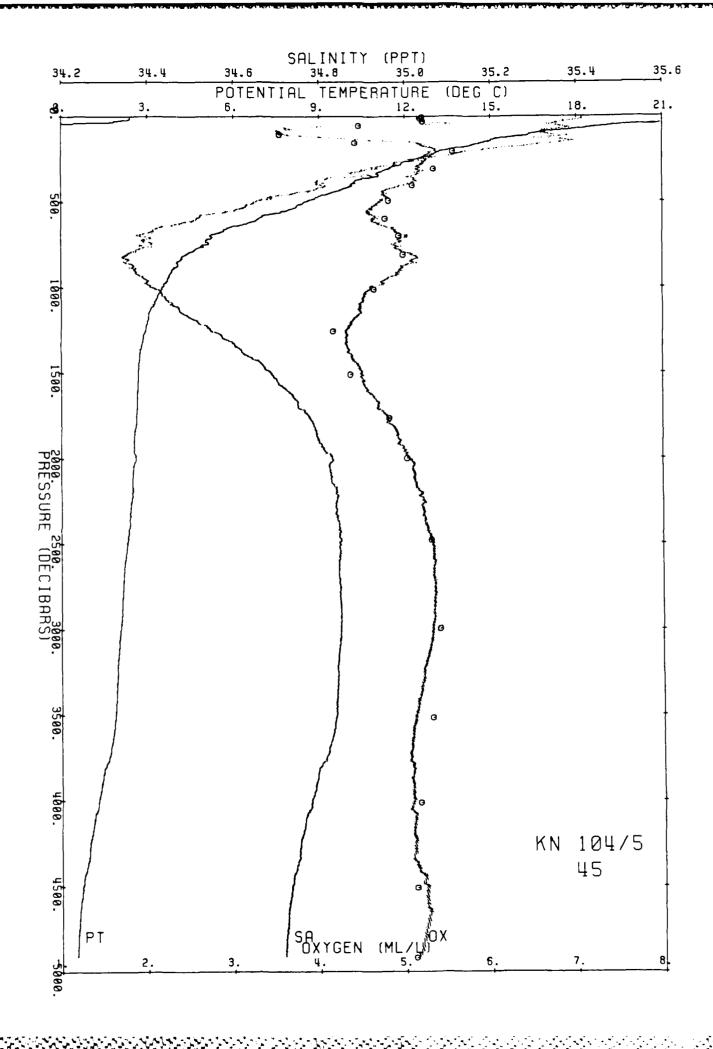
NATIONAL BUREAU OF S MICROCOPY RESOLUT TEST

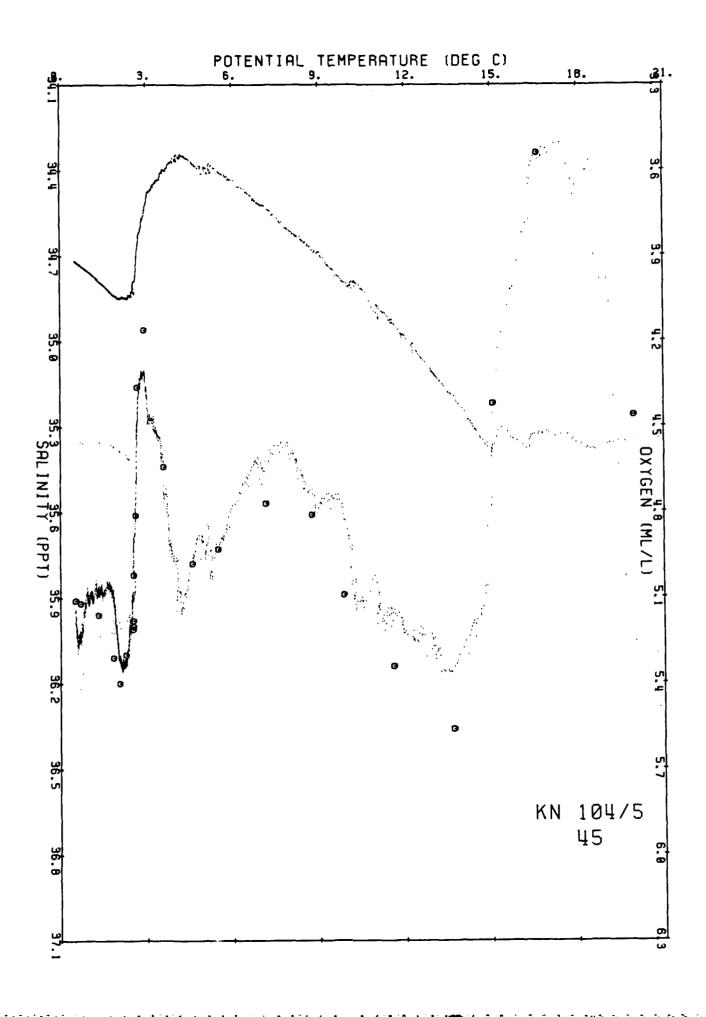


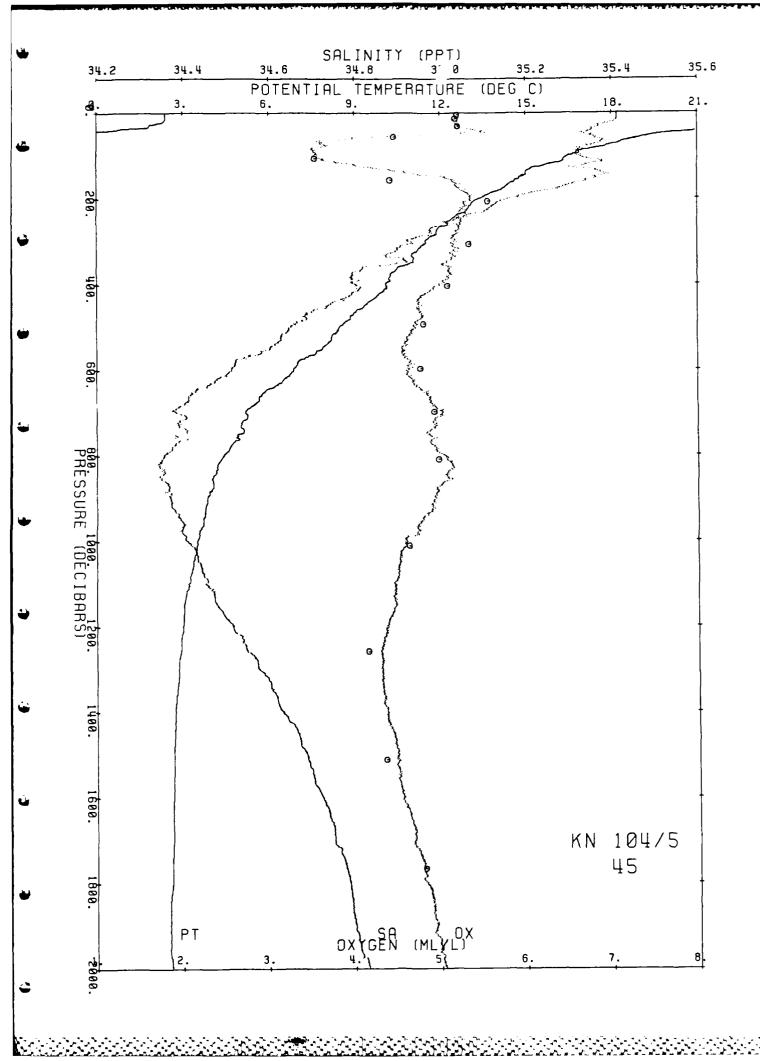




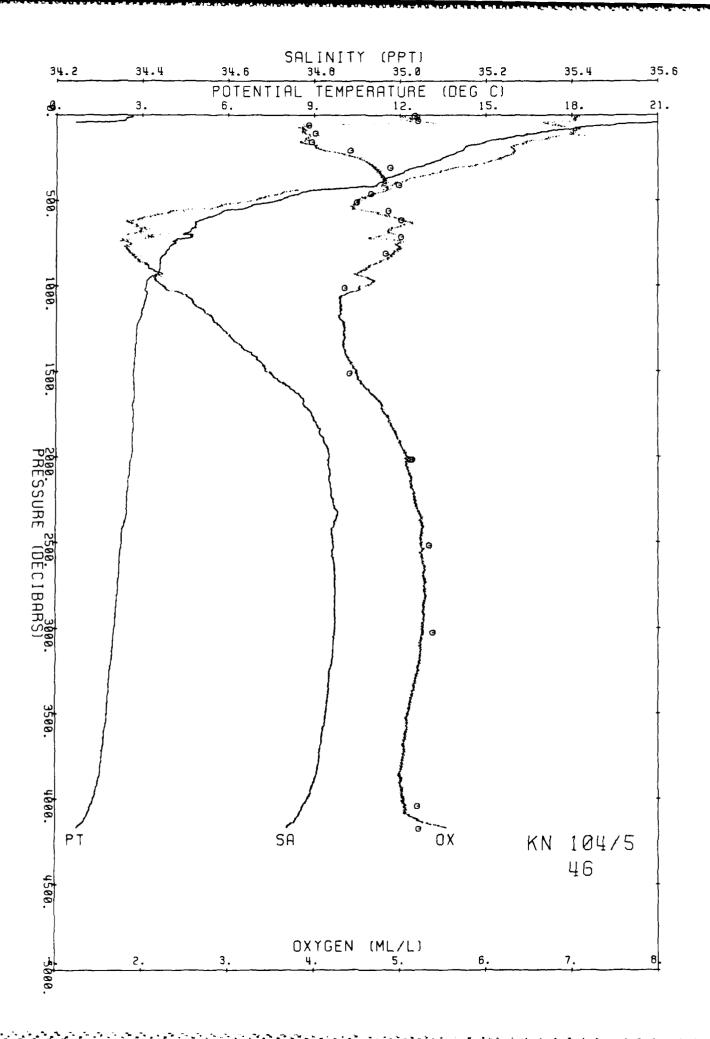
s	hip	KN	Cru	ise	10	45 9	tati	ion	4 5	Ca	st	1	DΤ		
_	tart		38		33		20			E	a t	64	_	83/	11/29
E	in d	;	38	5 .	44	S	20	59	. 24	E	a t	100	0		
PR	TE	PT	SA	οx	os	80	51	82	83	84	AN	HZ	BV	DE	
	23.404									40.468			0.00	0.0 10.0	
20	23.339	23.335	35.408	5.2	107.3	24.147	28.368	32.496	36.536	40 . 488	376.5	.08	2.24	20.0	
	22.850									40.629			5.97 9.87	29.9 39.9	
50	19.672	19.663	35.353	5.0	96.9	25.121	29.396	33.577	37.667	41.669	285.2	.18	13.16	49.9	
	18.787 18.314									41.964			8.71 6.25	59.9 69.8	
	17.688 16.818									42.276			6.11 8.08	79.8 89.8	
100	16.528	16.511	35.326	3.6	64.5	25.881	30.208	34.440	38.579	42.628	214.5	5 .30	4.68	99.7	
	15.781 15.033									42.864			5.43	119.7 139.6	
160	14.633	14.610	35.337	5.2	90.2	26.318	30.679	34.944	39.114	43.194	174.6	. 42	2.96	159.5	
	14.101									43.279 43.418			2.68 3.69	179.4 199.3	
	13.053				89.1	26 . 480	30.873	35.168	39.369	43.477	160.4	4 .52	2.36	219.2	
	12.612 12.329									43.553 43.618			2.62 2.63	239.1 259.0	
	11.917									43.685			2.38	278.9 298.8	
										43.794			2.19 2.19	318.7	
	11.145									43.841			2.41	338.6 358.4	
380	10.309	10.264	34.795	5.1	80.9	26.747	31.198	35.549	39.805	43.966	137.8	3 .75	2.20	378.3	
400 450	9.403		34.803 34.734							44.010			2.28	398.2 447.9	
500	8.553	8.500	34.653	4.7	72.1	26.926	31 416	35.806	40.099	44.296	121.6	3 .91	2.26	497.6	
550 600	7.940 6.944		34.604 34.514							44.406			1.97	547.2 596.9	
650 700	5.946 5.261		34.431 34.385	4.9						44.729			2.25	646.5	
750	4.990		34.411	5.0 4.9	68.6	27.217	31.794	36.269	40.644	44.921	93.	2 1.18	1.91 1.89	696.1 745.7	
900	4.490 3.931		34.357							44.984		5 1.22 7 1.31	1.20	795.3 894.4	
1000	3.593	3.521	34.412	4.6	62.6	27.367	31.981	36 . 492	40.901	45.211	78.0	5 1.39	1.52	993.5	
1100	3.285 3.088		34.454 34.518							45.305		7 1.47		1092.5	
1300	2.949	2.858	34.578	4.3	57.8	27.561	32.192	36.719	41.143	45.468	60.	9 1.60	1.43	1290.4	
1400	2.843 2.782		34.634 34.688							45.533		2 1.66 1 1.71		1389.3 1488.1	
1600	2.776 2.766		34.724							45.618		1.76		1586.9	
1700 1800	2.743		34.750 34.786	4.8						45.641 45.675		5 1.81 2 1.86		1685.6 1784.3	
1900	2.679		34.800	4.9 5.1						45.699		1.91		1882.9	
2100	2.654	2.498	34.826	5.1	68.1	27.791	32.430	36.964	41.396	45.727	43.	9 2.00	. 57	2080.0	
2200	2.642 2.578		34.839 34.840							45.741		2.04		2178.5 2276.9	
2400	2.551	2.369	34.845	5.2	69.6	27.817	32.459	36 . 997	41.432	45.766	42.1	8 2.13	. 54	2375.3	
2500 2600	2.486 2.408		34.848 34.846	5.3 5.3						45.783 45.797		3 2.17 5 2.21		2473.7 2572.0	
2700 2800	2.373 2.346		34 . 846 34 . 848							45.805 45.814		9 2.25		2670.2	
2900	2.329		34.850	5.3	70.4	27.843	32.493	37.037	41.479	45.820		9 2.34		2768.4 2866.6	
3000 3200	2.295 2.215		34.849 34.843							45.828 45.841		2.38		2964.7 3160.8	
3400	2.172	1.899	34.840	5.2	67.9	27.852	32.507	37.057	41.504	45.851	42.0	5 2.55	. 36	3356.8	
										45.860 45.890				3552.5 3746.1	
4000	1.565	1.263	34.779	5.1	65.8	27.850	32.523	37.092	41.557	45.920	39.	9 2.80	. 67	3943.5	
4400		. 845	34.744	5.1	65.9	27.850	32.536	37.116	41.593	45.942 45.967	37.	1 2.95		4136.8 4333.8	
4600 4800	1.021									45.989				4528.7 4723.5	
4911	. 928									46.004				4831.5	
PR	TE	PT	SA	02	81	PO	N3 1	M2 NH	4 50	51		82	83	84	DE
5	23.538	23.537	35.424	5.20	4.3	0.16	1.2 0	.01 0.	20 24.1	01 28.3	18 32	.444 36	. 480	40 . 430	4.8
										.02 28.3 .06 28.3					13.6 31.0
56	19.967	19.957	35.376	4.46	4.8	0.41	4.3 0	.34 0.	28 25.0	61 29.3	32 33	. 508 37	.594	41.592	55.5
156	15.084	15.060	35.304	4.42	8.2	0.80	10.0 0	27		62 30.18 94 30.5					
306	13.689	13.660	35.218	5.56	4.9	0.62	6.3 0	.02		28 30.86 35 31.0					
403	9.892	9.845	34.769	5.09	10.3	1.28	15.6		26.7	98 31.2	58 35	.619 39	.883	44.053	399.6
493	8.801	8.748 7,143	34.679	4.81	10.8	1.53	13.0 16.5		26.9 27.0	07 31.3°	92 35 55 35	.777 40	0.064 0.300	44 . 256 44 . 526	486.3 591.3
698	5.537	5.478	34.416	4.93	19.4	2.09	22.6		27.1	56 31.7	20 36	182 4	544	44.807	691.4
509 1012	4.653 3.653	4.589 3.579	34.371 34.400	4.98	27.0 32.8	2.22	25.6 24.2		27.2 27.3	(43 31.8) (51 31.9)	10 36 64 36	. 294 40 . 474 40	3.677 3.681	44.962 45.190	801.6 1001.5
1258	3.001	2.913	34.549	4.16	46.8	2.55	24.4		27.5	33 32.1	63 36	.688 4	112	45 435	1244.9
1767	4.781 2.739	2.611	34.779	4.81	49.7	2.13	25.4		27.7	44 32.3	74 36 79 36	.043 4 1	. 341	45 670	1745.6
2001 2481	2.677	2.529	34.820	5.02	28.7	1.98	12.8		27.7	84 32.4	21 36	.955 4	386	45.717	1976.4
1998	2.281	2.046	34.856	5 40	50.4	1.87	23.0		27.6	53 32 50	37	050 4	493	45 836	2954.6
3520 4016	1.122 1.638	1.837	34.837	5.31 5.16	43.4 52.8	1.92	17.2 17.3		27.8 27.8	54 32.5 55 32.5	11 37 27 37	.063 4	.512	45.860 45.919	3464.4 3948.5
4511	1.068	0.705	34.736	5.12	41.6	2.32	13.0		27.8	53 32.5	42 37	.127 4	.607	45 985	4430.4
4919	0.930	0.524	34.721	5.11	93.6	2.34	48 . B		47.8	98 31.2: 07 31.3: 133 31.5: 56 31.7: 123 31.8: 151 31.9: 133 32.1: 157 32.2: 144 32.3: 184 32.4: 128 32.4: 128 32.4: 1553 32.5: 155 32.5: 152 32.5:	97 37	.136 4	.622	46 . 005	4826.1



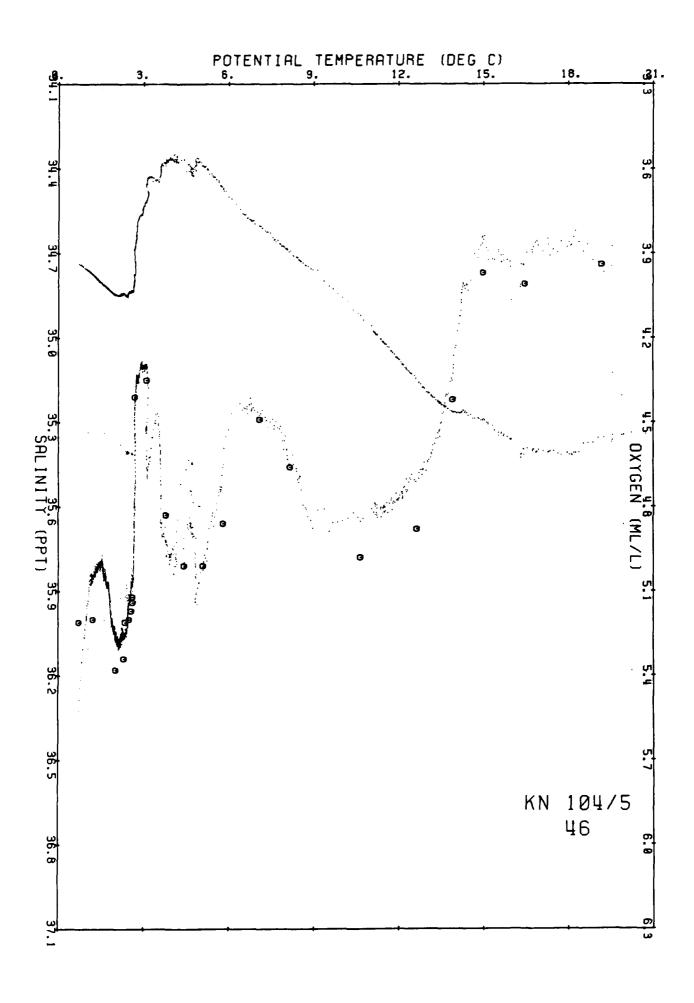


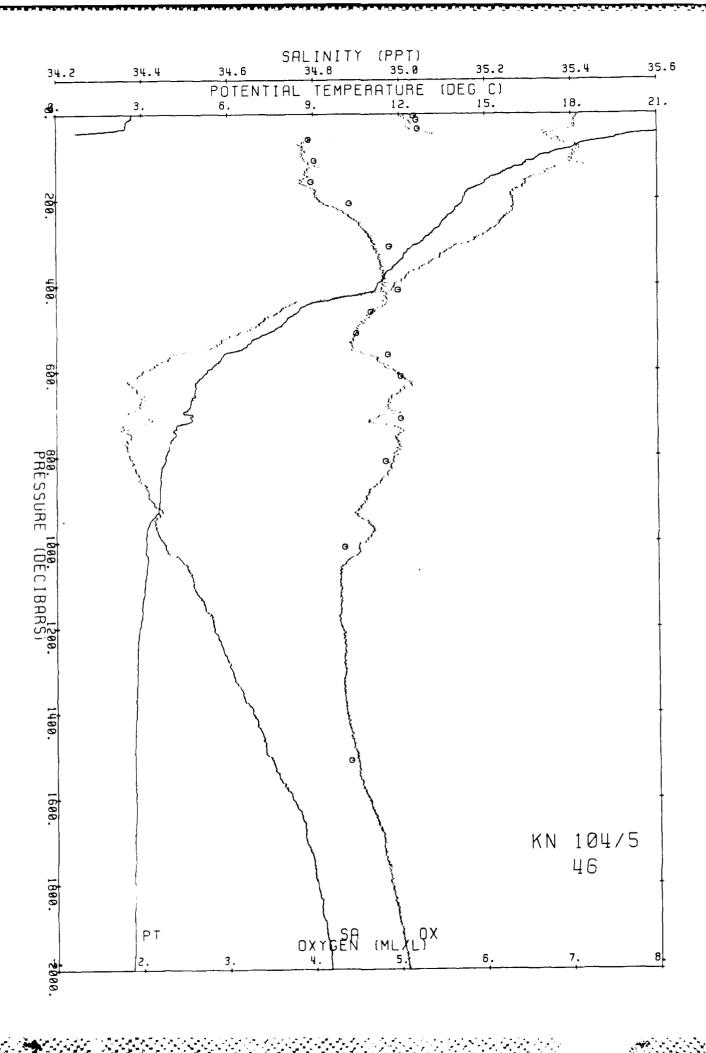


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PR	TE	PT	SA	ox	os	so	31	52	S 3	54	AN	HZ	вv	DE	
	23.656									40 382			0.00	0.0	
	23.658									40 360		.04	- 84	10.0	
20	23.450	23.446	35.410	5.1	105.8	24.117	28.336	32.463	36.500	40.451	379.8	.08	4.37	20.0	
30	23.422	23.416	35.410	5.1	104.8	24.125	28.345	32.472	36.510	40.462	379.4	.11	1.68	30.0	
	22.635			5.2	105.9	24.299	28.530	32.668	36.717	40.679	363.3	. 15	7.38	39.9	
	19.979			4.9						41.565		. 18	15.21	49.9	
	19.273			4.0						41.799		. 21	7.77	59.9	
	18 388			3.9						42 118		24	9 16	69.8	
	18.051			3.9						42.229		. 26	5 31	79 B	
	17.389 16.910			3.9 3.9						42.424		. 29	6.95	89 8	
	16.351			4.0						42.758		. 31	6.05 4.87	99 7 119 7	
	15.573			3.9						42 923		. 39	4.18	139.6	
	15.007			3.8						43 055		.43	3.83	159.5	
	14 399			4.0						43.206		. 47	4.15	179.4	
200	14.263	14.234	35.265	4.1						43.248		50	2.25	199.3	
220	13.990	13.959	35.264	4.3	73.6	26.401	30.774	35.051	39.234	43.325	168.4	. 53	3.03	219.2	
240	13.708	13.674	35.247	4.4						43.393		. 57	2.73	239.1	
	13.466			4.5						43.449		. 60	2.48	259.0	
	13 119			4.6						43.519		63	2.68	278.9	
	12.779			4.7						43.586		.66	2 56	298.8	
	12.324			4.7						43.674		. 69	2.95	318.7	
	12.093			4.8 4.8						43.713		.72	1.85	338.6	
	11.515			4.8						43.769		.75 .78	2.13	358.5 378.4	
	11.276			4.8						43.863		. 81	2.03	398.2	
450	8.688		34.734	4.8						44.324		. 88	4.08	447.9	
500	7.741		34.658	4.5						44.493		.93	2.43	497.6	
550	6.470		34.544	4.4						44.697		.98	2.54	547.2	
600	5.319	5.269	34.402	4.9						44.842		1.03	1.74	596.9	
650	4.885	4.833	34.389	5.0	70.1	27.210	31.790	36.268	40.645	44.924	92.4	1 08	1.72	646.5	
700	4 . 500		34.382	5.0						45.000	88.8	1.13	1.66	696.1	
750	4.216		34.373	5.0						45.052		1.17	1.35	745.7	
800	3.876		34.370	4.9						45.119		1.21	1.58	795.3	
900	3.684		34.419	4.6						45.196		1.29	1.40	894.4	
1000	3.208		34.449	4.6						45.314		1.37	1.60	993.5	
1100 1200	3.152 2.956		34.516 34.566	4.3						45.378 45.456		1.44		1092.5	
1300	2.872		34.506	4.3						45.504		1.50		1191.5 1290.4	
1400	2.854		34.649	4.4						45.542		1.62		1389.2	
1500	2.799		34.690	4.5						45.586		1.67		1488.1	
1600	2.835		34.744	4.6						45.622		1.72		1586.8	
1700	2.798	2.675	34.777	4.8	63.9	27.737	32.371	36.900	41.328	45 656		1.77		1685.5	
1800	2. 026	2.694	34.804	4.9	65.3	27.757	32.390	36.919	41.346	45.673	46.0	1.82	. 76	1784.2	
1900	2.806		34.822	5.0						45.692	45.0	1.86	. 75	1882.8	
2000	2.774		34.834	5.1						45.709		1.91		1981.4	
2100	2.722		34.837	5.1						45.723		1.95		2079.9	
2200	2.655		34.840	5.2						45.740		1.99		2178.4	
2300 2400	2.631 2.545		34.848 34.846	5.2 5.2						45.752 45.768		2.04		2276.9	
2500	2.484		34.843	5.2						45.779		2.12		2375.3 2473.6	
2600	2.421		34.844	5.3						45.793		2.17		2571.9	
2700	2.408		34.849	5.3						45.801		2 21		2670.2	
2800	2.360	2.144	34.849	5.3	69.9	27.839	32.487	37.031	41.472	45.812	42.0	2.25	. 52	2768.4	
2900	2.321	2.096	34.848	5.3	69.6	27.642	32.492	37.037	41.479	45.820	41.9	2.29	46	2866.5	
	2.279	2.044	34.848	5.3	69.3	27.847	32.497	37.044	41.487	45.830	41.8	2.33	. 51	2964.7	
			34.839											3160.8	
			34.831											3356.7	
	1.998		34.820											3552.5	
3800 4000			34.809 34.784											3748.1	
4169			34.736											3943.5	
,	554			J.J		27.001			-1.303	-J. 701	J. 7	3 4	4	*****	
PR	TE	PT	SA	02	SI	PO	N 3	12 NH	4 50	\$1	s	2	S 3	54	DE
			35.422		4.8	0.18	0.9 0	.01 0.		88 28.3					4.4
			35.420				0.9 0			09 28.3					
			35.410		4.3	0.14	8.4 0	. 01		44 28.3					
			35.387	3.94	5.2	0.60	0.4 0 8.5 0	. 42	25.2	73 29.5	56 33.	744 37	1.841 4	1.850	59.4
			35.414						25.9	59 30.2 09 30.5	97 34 .	519 36	3.658 4	2.707	108.1
			35.301	3.97		0.93		. 0 2	26.2	09 30.5	54 34.	822 38	1.987 4	13.060	157.5
			35.263	4.42	9 1	0.91	10.4 0	. 01	26.4	11 30.7 86 30.9	B6 35.	063 39	3.247 4	13.339	207.3
			35.156	4.88	9.1	0.91	y.5 0	.01	26.5	BB 30.9	85 35.	487 39	1 495 4	13.610	307.3
			34.925						26.7	05 31.2	49 35. Da 35	30 / 39). U14. 4	14.400	407.5
			34.689						27.0	UJ 31.5	04 35. 15 24	700 40	/.177 4 1 361 /	14.4UJ	43/.7 507 0
562	5 866	5.817	34.600 34.442	4 . RK	18 9	2.06	L9.2		27.0	35 31 6	90 36	144 4	,.301 4) 497 4	4 751	557 3
613	5.144	5.094	34 . 391	5.01	17.0	2.19	14.5		27.1	82 31.7	55 36	227 40) 598 4	4.871	607.6
712	4.481	4.426	34.371	5 01	30.0	2.30	29.4		27.2	41 31.8	32 36	320 40	707	4 995	705.7
812	3.859	3 800	34.391 34.371 34.373	4.83	21.3	2.41	16.5		27.3	B2 31.2 05 31.5 92 31.6 35 31.6 82 31.7 41 31.8 08 31.9 44 32.0	15 36	419 40	822 4	5 125	804 2
									27.4	44 32.0	68 36	590 41	. 009 4	15.328	1001.8
1511	2.811	2.704	34.699 34.834	4.41	32.7	2.37	16.2		27.6	72 32.3	05 36.	835 43	1.263 4	5.590	1494.1
2017	2.773	2.623	34.834	5.14	43.8	1.95	23.7			87 32.4					
2017	2.771	2.621	34.835	5.12						88 32.4					
2519	2.502	2.310	34.851 34.848	5.34	45.8	1.90	22.4			27 32.4					
	2.250	2.013	34 848	5.38	46.4	1.90	21.1			49 32.5					
	2.062			e 10	47 -	,	25. ^		27.8	46 32.5	04 37	058 41	. 509 4	15 858	3477.7
			34.779 34.736						47.8	53 32.5	48 37	U9/4]	1 504	15.928	39/4 2 4103 1
47/4	1.043	J. /18	3-3.730		J7.0	a. 3% .			∡ / . 8	52 32.5	4	143 41		13.78J	4103 1

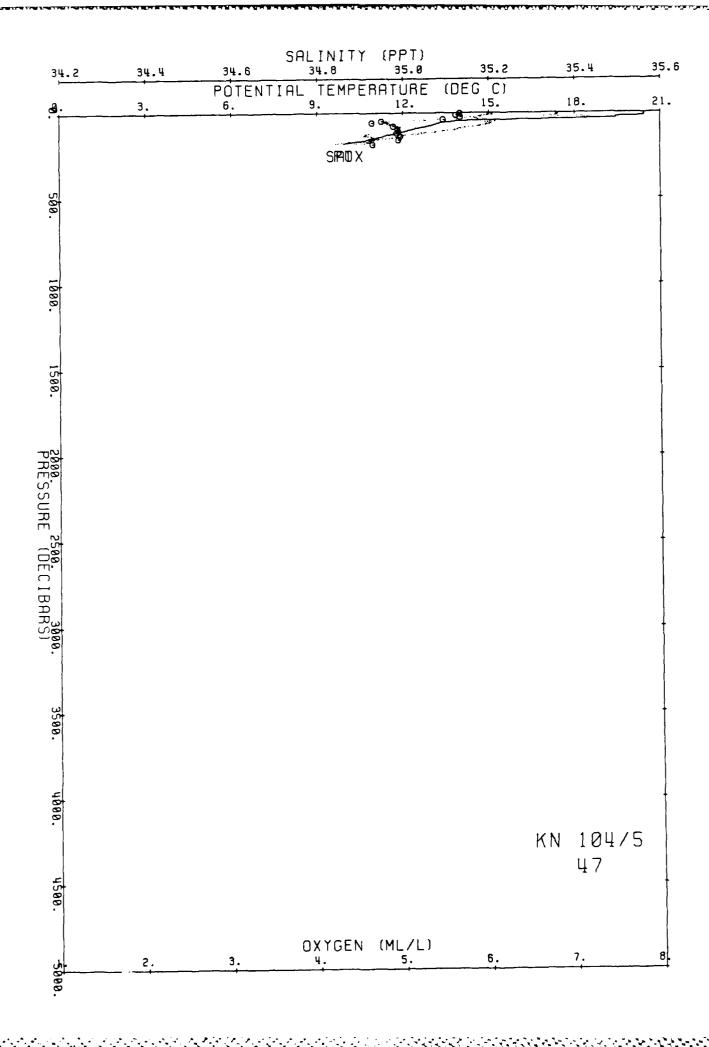


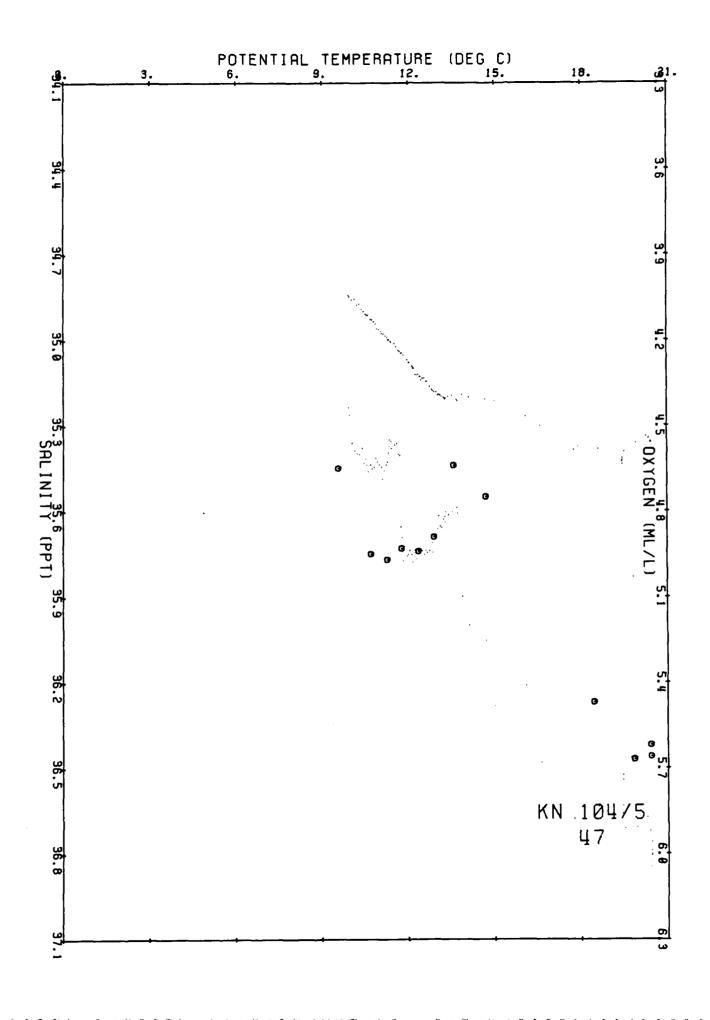
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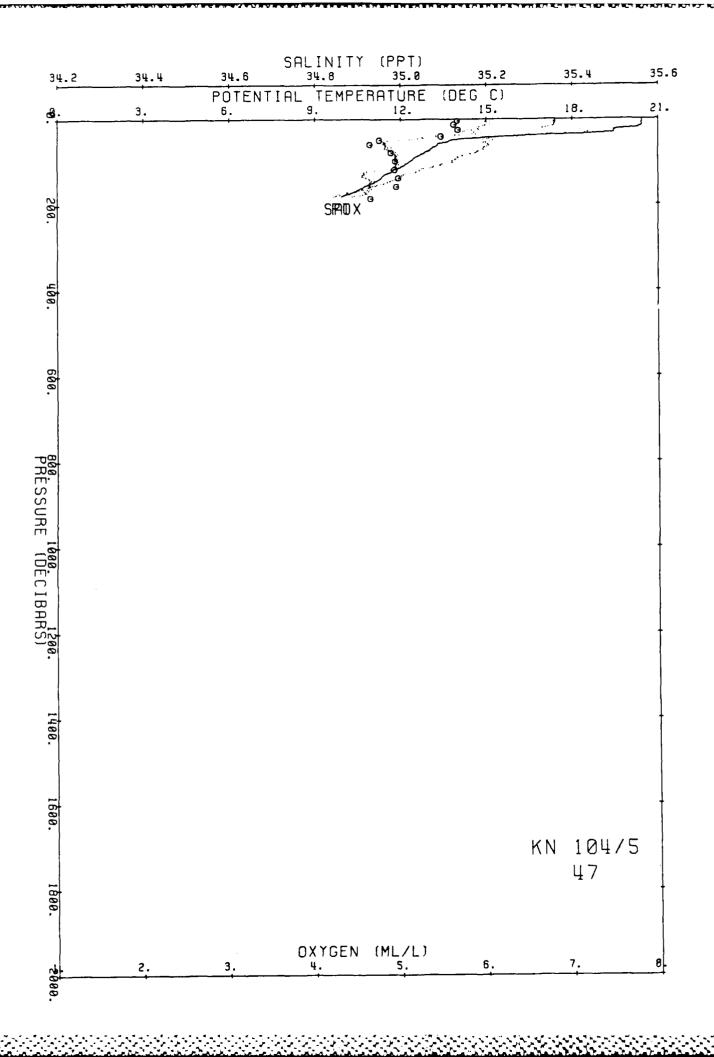




Ship KN Cruise 1045 Station 47 Cast l DT .16 E Start 36 39.89 S 21 a t 110 83/11/30 End 39.31 S 2059.94 E 38 145 a t PR TE PT SA so OX os S1 S 2 ΗZ BV DE S 3 S4 AN 0 20 432 20 432 35.360 6.0 117 4 24 923 29.186 33 355 37.434 41 426 302.1 0.00 0 00 0 0 10 20 421 20 420 35 360 $6.0\ 118\ 2\ 24.926\ 29.189\ 33.359\ 37.438\ 41.430\ 302.2$. 03 1 04 10 0 20 20 288 20.284 35.338 5.9 114.6 24.945 29.211 33.383 37.464 41.458 300.8 .06 2.47 20 0 30 19 460 19 455 35 437 5.7 110.1 25.239 29.517 33.701 37.794 41 798 273.2 09 9 60 29 40 16 084 16.078 35.268 97.4 25.937 30 272 34.511 38.658 42 714 207.0 5 4 11 14 81 39 50 13 723 13 716 35.214 4.8 82 5 26.413 30.791 35.073 39.260 43 356 162.0 . 13 12.24 60 13 292 13.284 35.205 81.9 26.495 30.882 35 171 39 367 43 470 154 5 4 8 15 5 08 70 13 078 13 069 35 192 4.8 81.5 26 528 30.920 35.213 39.413 43.520 151.6 . 16 82 7 26 562 30 958 35 256 39 460 43 571 148 6 80 12 840 12 829 35 173 4.9 18 90 12 512 12 500 35.134 49 82 6 26 597 30.999 35.304 39 514 43.632 145 6 89 19 3 34 100 12 319 12.306 35.121 5.0 82.7 26 625 31.031 35 340 39.554 43.675 143.2 21 2 97 99 120 11 771 11 756 35.045 4.9 79.9 26.671 31 089 35.409 39.634 43 765 139 24 119 140 11 299 11.282 34.990 75 3 26 717 31 145 35 475 39.709 43 849 135.3 4.5 26 2 71 139 160 10 719 10.700 34.926 4.6 74.6 26.772 31.213 35 555 39.801 43.953 130 3 29 3 00 159.4 9.985 180 9.964 34 849 4.5 70 5 26 841 31 297 35 655 39 916 44 083 124 1 31 179 3 34 181 9 957 9.936 34.844 4.4 70 1 26.841 31.299 35.657 39.919 44.086 124.0 . 32 180 2 TE PR PΤ SA 02 SI PO N 3 N 2 NH4 Sı 52 SO S 3 S 4 DE 4 20 412 20 411 35 360 5 66 0.13 0 7 0.01 0.20 24.928 29 192 33.362 37 441 41 433 4 0 13 20 410 20.408 35.360 5.62 24 929 29 193 33 363 37 442 41 434 4 0 0.12 0.7 0.01 128 26 19 844 19.839 35.354 5 67 0 8 4.4 0.13 0 01 25.075 29.348 33.526 37 614 41 613 25 5.9 40 18 438 18 431 35 387 5 47 0.20 1.4 0.14 25 462 29 757 33.957 38.065 42.085 40 26 220 30 130 34.844 39.014 43 094 49 14 690 14 683 35 230 4 75 7 0 74 5 9 0 68 48 60 13 572 13 564 35.208 4 64 10.0 0.89 10.1 26.440 30 821 35.106 39.296 43 394 0.36 12 897 12 886 35 188 4 89 7.0 0.87 9.4 0 13 26 562 30 957 35 254 39 457 43 567 78 12.365 12.352 35 125 4.94 8 7 0 92 10.1 0.17 26.619 31.024 35.332 39.545 43 665 118 11 786 11 771 35 054 4 93 26 675 31 093 35 413 39 637 43 768 1.03 11.2 0.20 138 11 282 11.265 34.993 4.97 8.6 1.12 13.7 0.09 26.722 31 151 35.481 39 715 43.856 136 158 10 715 10.696 34.929 4.95 10.7 1.19 14.5 0.06 26.775 31 216 35.558 39 804 43 956 156 8 13.9 9.568 34.804 4.65 1.53 18.8 0.18 26.872 31.338 35 704 39.974 44.148







Ship KN Cruise 1045 Station 48 1 DT Cast 22 59.97 E .06 S 83/11/30 35 at 1615 Start 59.09 S 22 58.79 E at 1649 End 34 Sl S 2 54 AN ΗZ BV DE PR TE PT SA OX OS SO **53** 0 21.608 21 608 35 356 -9.0 -9.0 24.599 28.845 32.997 37.060 41.035 332.9 0.00 0.00 0 0 .03 10 29 10 20.371 20.369 35 356 6.4 125.2 24.937 29.201 33.371 37.451 41.443 301 2 10.0 20 20 153 20 149 35 365 6.3 123.2 25.002 29.269 33.443 37.526 41.521 295.4 . 06 4.53 30 18.607 18 602 35.413 5.7 107.4 25.439 29.731 33.928 38.034 42.050 254.1 .09 11.72 .11 12.30 40 16.471 16.465 35.363 5.2 94.9 25.920 30.248 34.480 38.620 42.669 208.7 . 13 50 15.097 15.089 35.324 4.7 82.1 26.203 30.555 34.811 38.974 43.046 182.0 83.5 26,375 30.746 35.020 39.200 43.289 165 9 60 14.114 14.106 35.271 4.8 70 13.063 13.053 35.181 5.0 85.4 26.523 30.915 35.209 39.408 43.516 152 1 87.1 26.588 30.989 35.293 39.501 43.617 146.1 4.54 80 12 590 12 579 35 143 5.2 86.5 26.616 31.022 35.331 39.544 43.665 143 7 90 12.331 12 320 35.113 5.2 85.5 26.635 31.044 35.356 39.573 43.697 142.2 100 12 172 12 159 35.097 5.2 120 11.240 11.226 34.986 5.2 84.4 26.724 31.153 35.484 39.719 43.861 134 0 140 10.412 10 396 34.902 5.1 80.7 26.807 31.255 35.603 39.855 44.013 126.4 3.66 . 26 73.9 26.924 31.406 35.789 40,073 44.263 115.3 160 8.866 8.849 34.721 180 8.207 8.189 34.690 . 29 4.8 67.4 27.002 31.500 35.897 40 196 44.399 108.1 4.4 SI PO NЭ N2 NH4 so PR TE PT SA 02 51 4.8 0.13 8.8 0.02 0 20 24.759 29.013 33.174 37.244 41.227 5 21 041 21 040 35 361 5.62 24.956 29.221 33.393 37.474 41.467 13 20.299 20.297 35.356 5.3 9.3 0.02 24.953 29.218 33.390 37 471 41 464 0.13 13 20.311 20.309 35.357 5.1 0.13 9.6 0.01 25.035 29.305 33.481 37.566 41.564 26 20.000 19.995 35.355 8.0 0.71 8 8 0.39 25.995 30.328 34.566 38.711 42.766 50 16.139 16.131 35.359 50 16.209 16 201 35 358 25.978 30.310 34.547 38.691 42 745 6.4 0.14 6.2 0.01 26.546 30.939 35.234 39 435 43.544 74 12.992 12.982 35.192 1.01 11.4 0.02 26.635 31.043 35.354 39.570 43.693 99 12,222 12,209 35,110 7.2 1.22 14.5 0.05 0.78 26.753 31.186 35.521 39.760 43.906 124 11.042 11.027 34.976 10.6 148 10.140 10.123 34.881 11.2 1.29 17.6 0.09 0.26 26.838 31.292 35.646 39.903 44.067

8.308 8.290 34.705

8.161 8.142 34.682 4.56 14.3

173

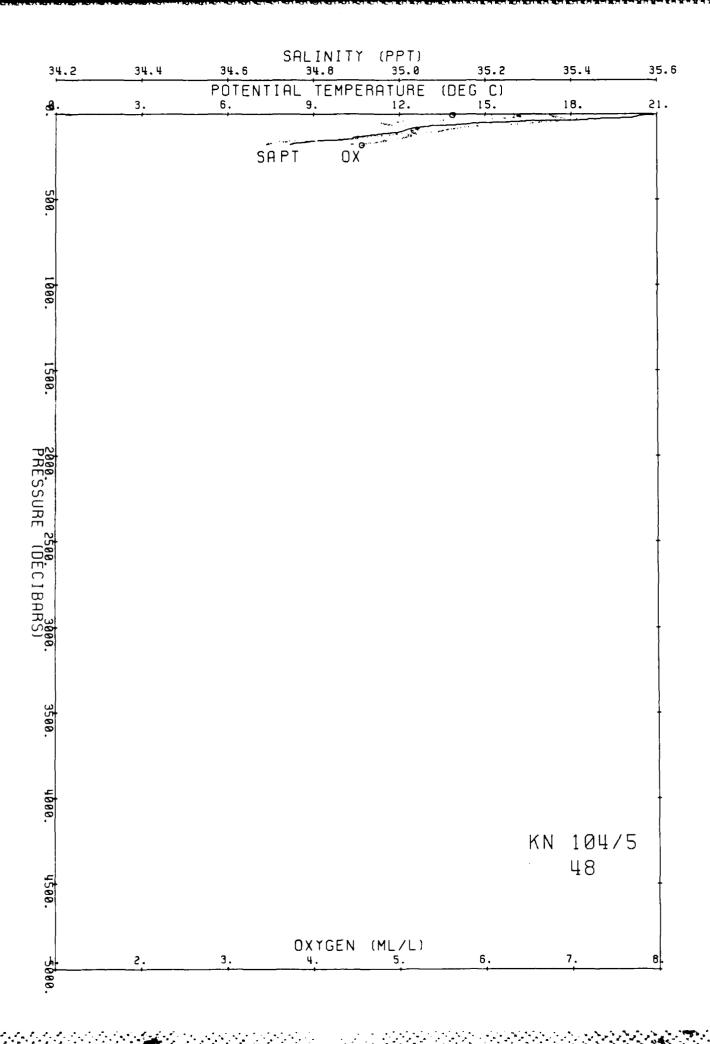
14.9

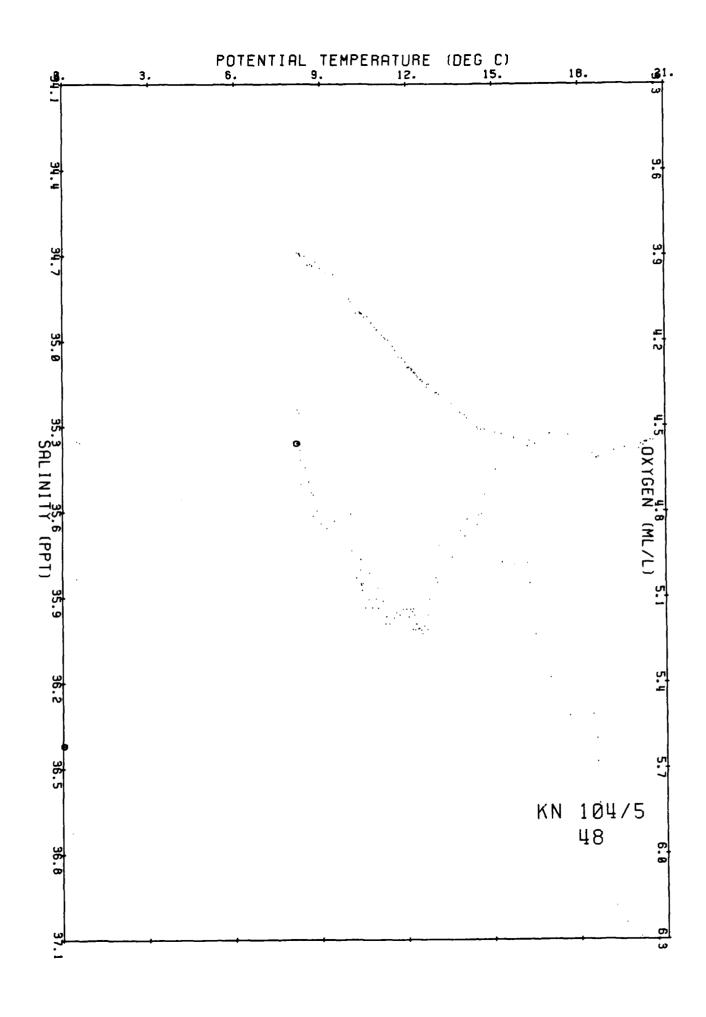
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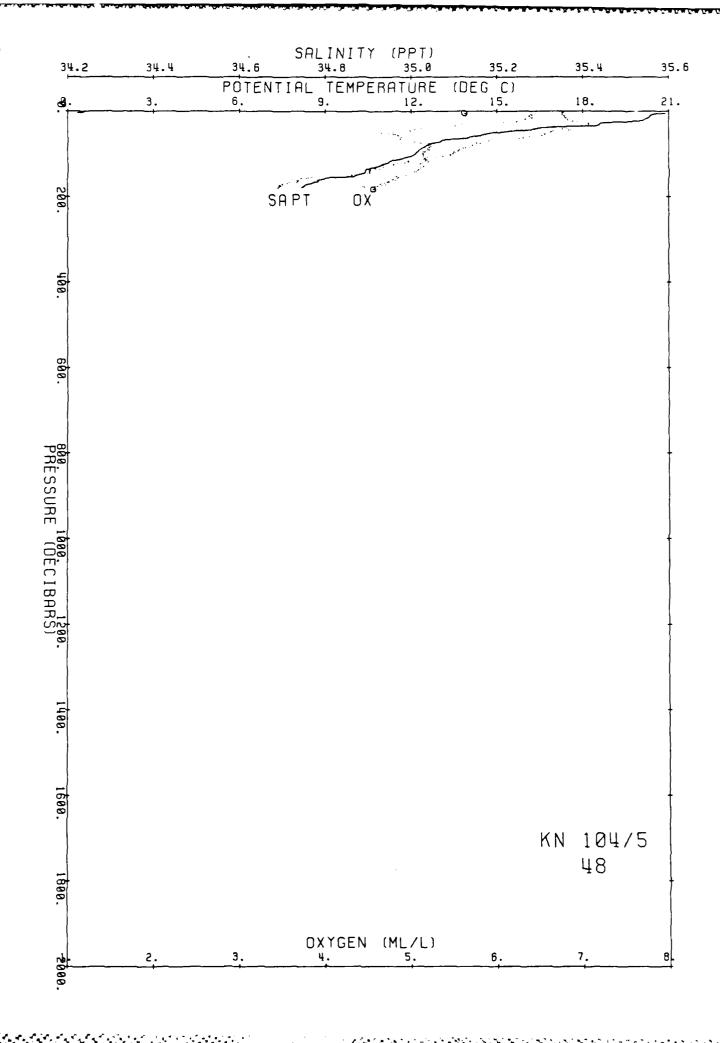
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0.20 26.999 31.493 35.888 40.185 44.386

0.42 27.003 31.501 35.899 40.200 44.404







2.751 34.703 4.18 51.5 2.54 25.7

2.455 34.799 4.88 35.3 2.14 18.0

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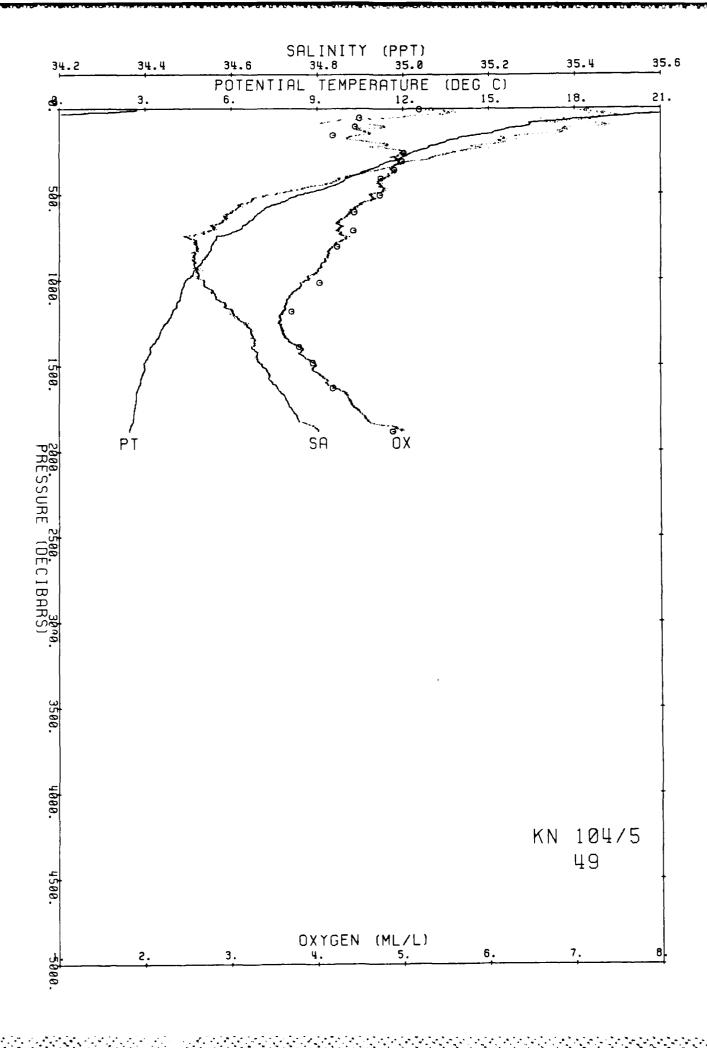
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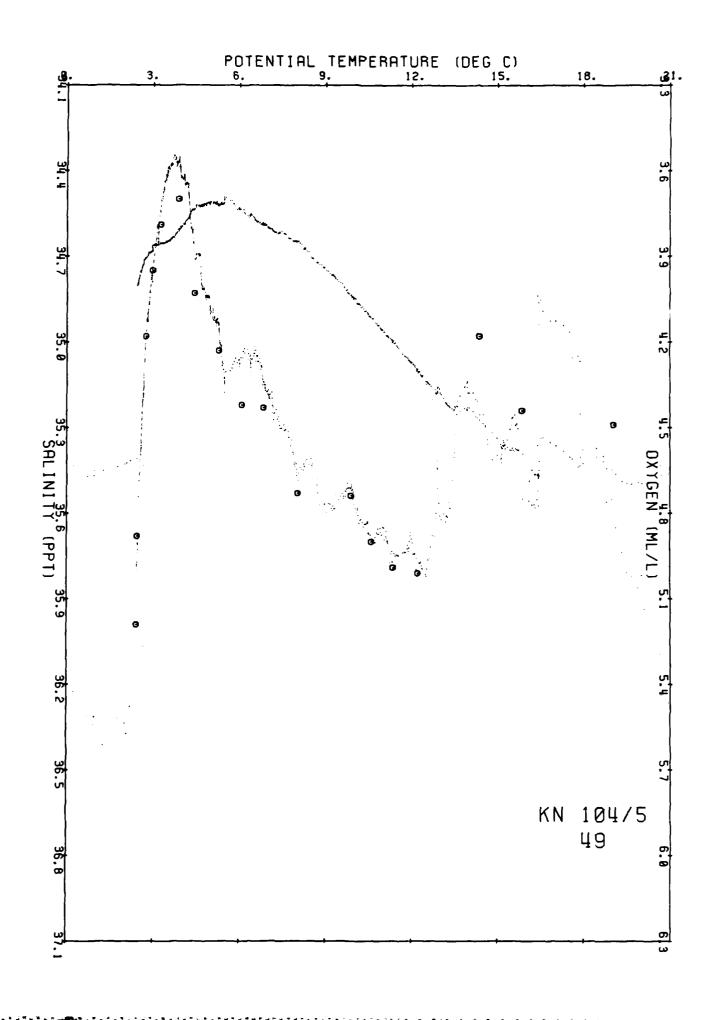
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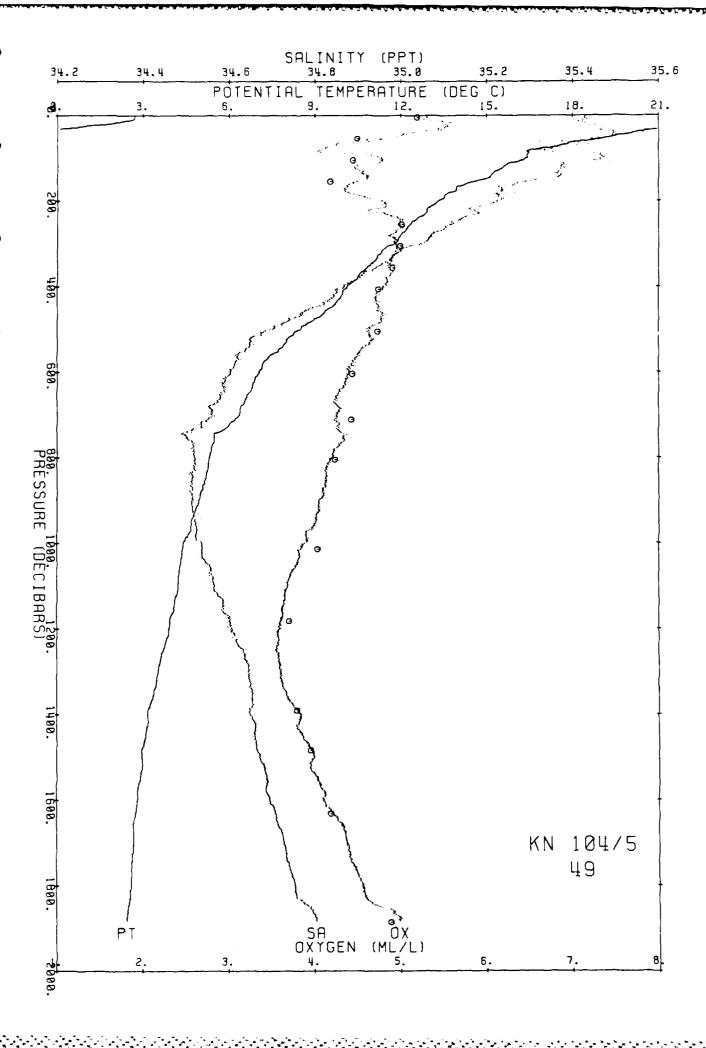
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0.49 27.773 32.413 36.949 41.382 45.715 1863.5



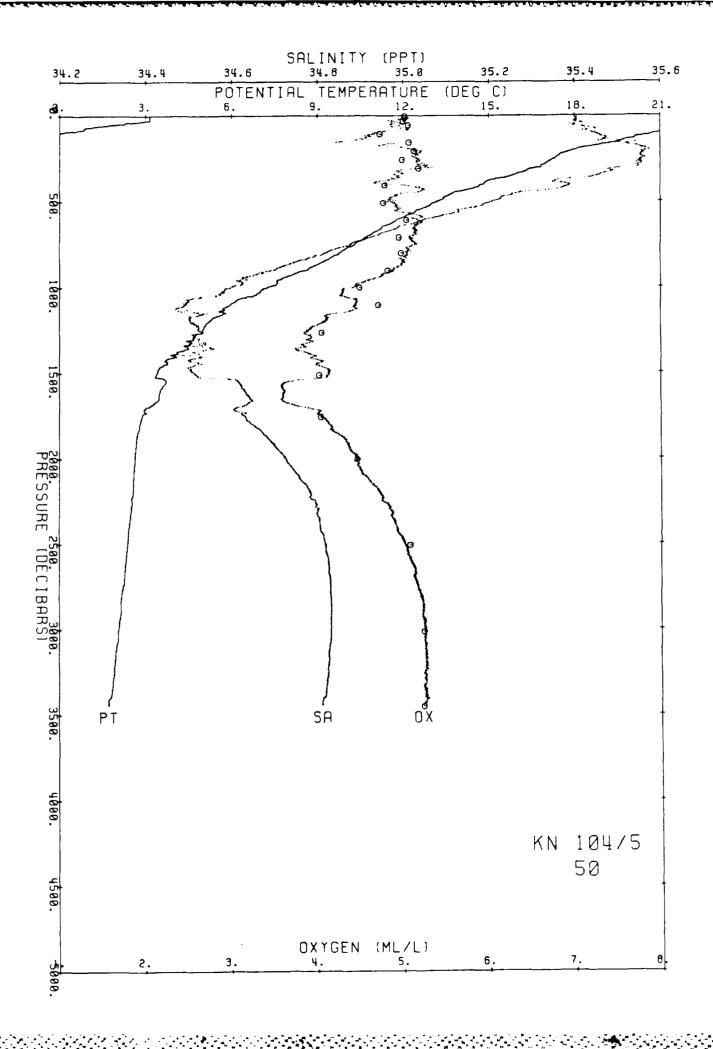
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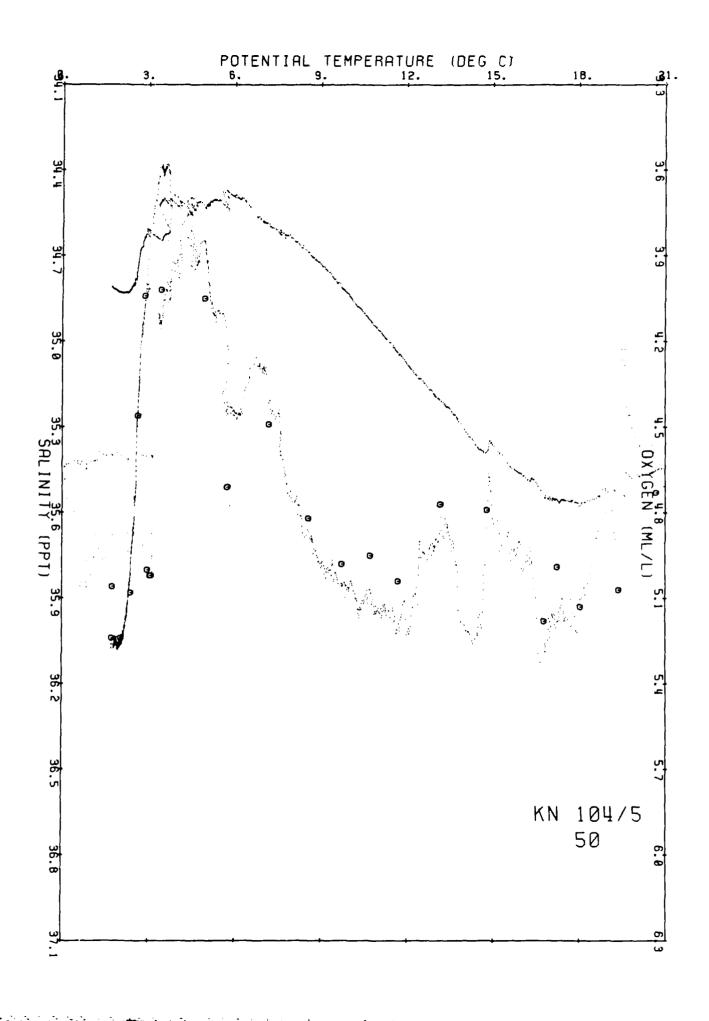


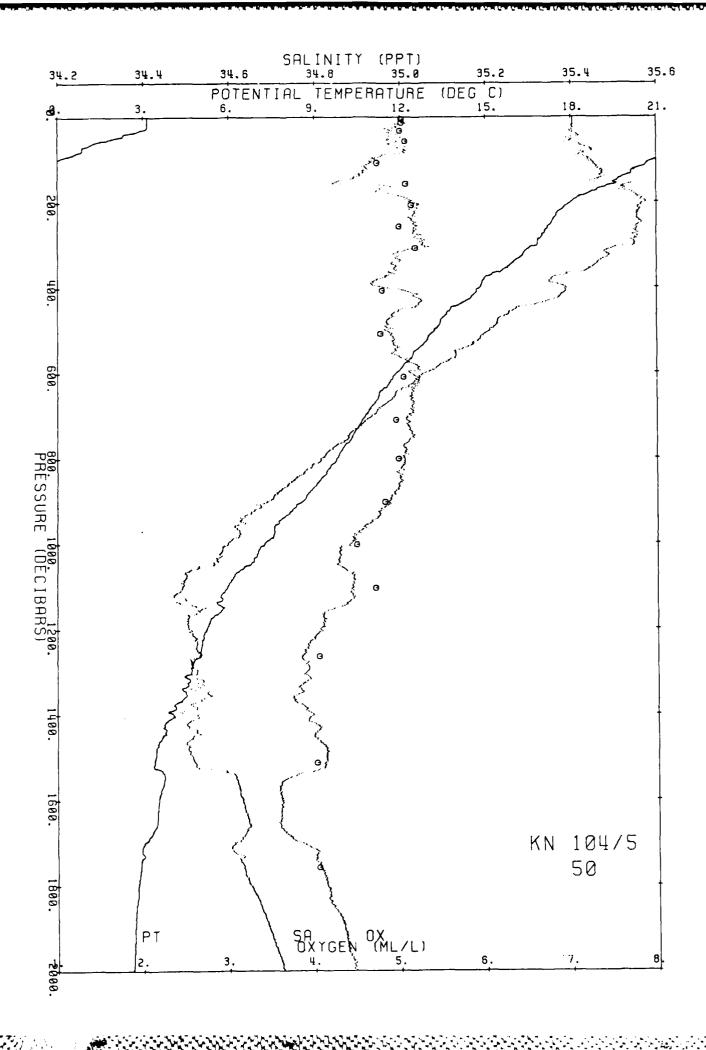


Ship KN Cruise 1045 Station 50 Cast 1 DT 47.82 E Start 36 10.09 S 23 a.t 452 83/12/ 1 End 38 9.22 S 23 50.09 E 721 a t PR TE PT SA OX OS SO 51 S 2 S 3 AN ΗZ вv DE **S4** 0 24 146 24.146 35.405 5.0 104.5 23.906 28.116 32.233 36 262 40 205 399.0 0.00 0.00 0 0 10 24.146 24.144 35.405 5.0 104.6 23.907 28.116 32.234 36.263 40.205 399.4 04 45 10 0 20 24.148 24.144 35.404 4.9 102.6 23.906 28.116 32.233 36 262 40 205 399 9 OR 48 20 0 30 23.943 23.937 35.402 4.9 101.5 23.966 28.178 32.299 36 330 40 275 394.6 12 30 0 40 23.325 23.317 35.412 4.9 101.7 24.156 28.377 32.505 36.545 40.498 376.9 7 73 50 22.927 22.917 35.390 99.4 24.255 28.481 32.616 36.660 40 618 367.9 4.9 . 20 5.58 60 22.317 22.305 35.386 4.9 99.7 24.427 28.662 32.805 36.857 40 823 351.9 7 35 23 70 21.878 21.864 35.432 5.1 101.7 24.586 28.827 32.976 37.034 41 006 337 2 7 07 80 21.869 21.854 35.449 5.0 101.3 24.602 28.843 32.991 37.050 41 022 336.1 30 2 23 90 21.451 21.434 35.418 95.6 24.695 28.942 33.097 37.162 41.139 327.6 4.8 33 5.42 100 20.977 20.958 35.447 93.1 24.847 29.102 33.263 37.334 41.318 313.4 4.7 . 36 6.93 120 20.378 20.356 35.465 90.1 25.023 29.287 33.457 37 536 41 528 297.4 4.6 . 43 5.27 119 140 19.870 19.844 35.479 87.2 25.170 29.441 33.619 37.705 41.704 284.2 4.5 4.81 139 . 48 160 19.433 19.404 35.528 4.8 92.7 25.322 29.600 33.784 37 877 41.882 270.4 4.90 159.6 . 54 180 18.643 18.611 35.549 4.9 92.6 25.541 29.831 34.028 38.132 42.148 250.2 5.89 179 59 200 18:049 18:014 35:576 5.2 96.5 25.711 30.011 34.216 38.330 42 355 234.6 199 . 64 5.19 220 17 674 17 636 35.558 5.2 96.2 25.790 30.097 34.308 38 428 42.458 227.7 3.55 69 219 240 17.420 17.380 35.557 5 1 95.1 25.852 30.162 34.378 38 502 42 536 222.5 3.13 239 .73 260 17.231 17.188 35.555 5.2 95.1 25.896 30.210 34.429 38.556 42.593 218.9 . 78 2.67 259 280 17.041 16.994 35.557 5.2 95.2 25.944 30.262 34.484 38 614 42 654 215.0 . 82 2.77 300 16.880 16.830 35.550 5.3 96.3 25.978 30.298 34 523 38.655 42 698 212.4 86 2 32 320 16.396 16.344 35.483 4.9 89.5 26.041 30.370 34.603 38 744 42 795 206.9 90 3 21 318 340 16.037 15.983 35.462 4.9 88.4 26.108 30.443 34.683 38 830 42 887 201.0 . 94 360 15.651 15.595 35.437 4.9 88.3 26.177 30.519 34.766 38.920 42 983 194.9 98 380 15.013 14.955 35.353 4.7 83.3 26.255 30.609 34.868 39.033 43.107 187.8 1.02 400 14.859 14.798 35.387 4.9 85.3 26.316 30.673 34.934 39.101 43 177 182.6 1 06 3.11 398 450 13.841 13.776 35.271 5.0 86.1 26.444 30.821 35.101 39.287 43.382 171.2 1 15 2.93 448 500 13.275 13.204 35.210 4.8 82.1 26.515 30.903 35.194 39.391 43.496 165.4 1.23 2.18 497 550 12.544 12.470 35.129 4.9 82.2 26.599 31.002 35.308 39.518 43.636 158.2 1 31 2.40 547 597 600 11.952 11.873 35.057 5.1 84.6 26.658 31.074 35.392 39.614 43.743 153.3 1 39 2.04 650 11.349 11.266 34.989 5.1 83.8 26.71; 31.147 35.477 39.712 43 853 148.1 1 47 2.07 646 700 10.864 10.777 34.933 5.1 82.6 26.764 31.203 35.544 39.788 43 938 144 4 1.54 1.91 696 750 10.402 10.311 34.879 5.2 82.2 26.804 31.253 35.604 39.858 44.017 141.1 1.61 1.72 746 800 9.881 9.787 34.816 5.1 79.7 26.845 31.306 35.667 39.932 44.103 137.6 1.68 1.76 795 900 8.686 8.587 34.689 4.9 74.7 26.940 31.428 35.817 40.107 44.302 128.5 1.81 1 92 894 1000 7.346 7.246 34.598 4.4 65.6 27.068 31.588 36.007 40.327 44.551 115.5 1.94 2 22 994 1 1100 6.056 5.954 34.492 4.5 64.3 27.157 31.709 36.158 40.509 44.761 105.6 2.05 1.95 1093 1 1200 5.206 34.511 57.6 27.264 31.834 36.301 40.669 44.938 5.310 4.1 94.9 2.15 1.99 1192 1 1300 4.770 4.661 34.524 3.9 54.6 27.337 31.920 36.401 40.781 45.063 87.7 2.24 1.67 1291.1 1400 4.155 4.043 34.525 54.8 27.404 32.004 36.500 40.895 45.192 4.0 80.4 2.32 1.66 1390 0 1500 56.0 27.459 32.075 36.587 40.998 45.310 74.0 2 40 3.532 3.419 34.515 4.1 1.56 1488 8 3.652 3.528 34.630 3.6 49.2 27.540 32.152 36.661 41.068 45.376 1600 67.9 2 47 1 53 1587 6 1700 3.9 3.025 34.613 51.9 27.574 32.200 36.722 41.142 45.462 3.151 63.4 2 53 1.33 1686 2.940 2.807 34.651 55.4 27.624 32.256 35.783 41.208 45.534 1800 4.1 58.6 2.60 1.36 1785 0 1900 2.832 2.692 34.691 4.3 57.9 27.666 32.301 36.831 41.259 45.587 54.9 2.65 1.21 1883 6 2000 2.788 2.639 34.727 4.5 59.4 27.700 32.335 36.866 41.296 45.624 52.3 2.71 1.05 1982 2 2100 2.751 2.594 34.757 4.6 60.7 27.728 32.364 36.896 41.326 45.656 50.2 2.76 .96 2080 8 4.7 2200 2.727 2.560 34.782 62.9 27.751 32.388 36.921 41.351 45.682 48.7 2.81 87 2179 2300 2.677 2.502 34.800 4.8 64.5 27.770 32.409 36.943 41.375 45.707 47.3 2.85 .84 2277 2400 2.625 2.442 34.806 4.9 65.4 27.780 32.420 36.956 41.390 45.723 46.7 2.90 .65 2376 2500 2.576 2.384 34.819 5.0 66.6 27.795 32.437 36.974 41.409 45.744 45.6 2.95 .77 2474 2.322 34.825 44.9 2.99 2600 2.522 5.1 67.4 27.805 32.449 36.988 41.424 45.760 66 2572 67.9 27.812 32.456 36.996 41.434 45.771 2700 2.484 2.275 34.828 5.1 44.7 3.04 .54 2671 0 2.183 34.831 68.8 27.822 32.469 37.011 41.451 45.791 2800 2.400 5.2 43.8 3.08 .72 2769 2900 2.369 2.143 34.031 69.0 27.825 32.473 37.017 41.458 45.798 5.2 43.9 3.13 .44 2867 3000 2.303 2.068 34.830 5.3 69.3 27.830 32.481 37.026 41.469 45.811 43.5 3.17 3200 2.201 1.948 34.827 5.3 69.4 27.837 32.491 37.040 41.486 45.832 43.1 3.26 .52 3161 6 3400 2.036 1.766 34.815 5.3 68.9 27.842 32.501 37.055 41.506 45.856 42.3 3.34 .57 3357.6 3444 2.000 1.725 34.811 5.2 68.5 27.842 32.502 37.057 41.509 45.860 42.2 3.36 50 3400 PR TE PT SA 02 SI PO N 3 N2 NH4 SO 31 S 2 S 3 4 24.091 24.090 35.401 5.02 5.0 0.16 1.1 0.01 0.45 23.920 28.130 32.249 36.278 40.221 4.1 13 24.062 24.059 35.399 5.02 3.7 0.16 0.7 0.56 23.928 28.138 32.257 36.287 40.231 13.1 5.1 0.16 1.6 0.65 23.957 28.170 32.290 36.321 40.266 32 23.968 23.961 35.400 5.00 31.8 57 22.764 22.752 35.405 5.06 5.6 0.17 0.9 0.13 1.22 24.314 28.542 32.679 36.726 40.686 56.5 0.13 0.41 24,940 29.199 33.364 37.439 41.426 107 20.700 20.680 35.470 4.73 0.28 2.6 157 19:406 19:378 35:532 5:07 5.6 0.22 2.0 0.02 0.48 25.332 29.610 33.795 37.888 41.893 207 18.003 18.047 35.578 5.13 3.0 0.28 2.0 0.01 0.29 25.704 30.004 34.209 38.322 42.346 257 17.296 17.253 35.558 4.99 0.36 2.5 0.01 0.43 25.883 30.196 34.414 38.540 42.576 3.5 307 16.830 16.779 35.553 5.18 0.37 4.0 0.34 25.992 30.313 34.539 38.672 42.716 5.2 0.65 7.8 407 14.841 14.779 35.380 4.79 1.12 26.314 30.672 34.933 39.101 43.178 6.3 0.87 11.2 508 13.228 13.156 35.210 4.77 7.7 26.525 30.914 35.206 39.403 43.509 609 11.760 11.680 35.035 5.04 6.0 0.99 10.6 0.68 26.678 31.097 35.419 39.645 43.778 10.2 710 10.805 10.717 34.927 4.95 1.18 15.1 0.38 26.770 31.210 35.552 39.798 43.949 801 9.827 9.733 34.809 4.98 10.3 1.32 17.8 0.49 26.849 31.311 35.674 39.939 44.111 793.4 902 8.667 8.568 34.688 4.82 11.7 1.54 14.8 0.49 26.943 31.431 35.820 40.111 44.306 893.4 1002 7.289 7.188 34.590 4.49 22.4 1.91 24.5 0.58 27.070 31.591 36.011 40.333 44.558 992.4 1103 5.841 5 741 34.469 4.71 26.0 2.14 26.3 0.81 27.166 31.723 36.178 40.533 44.790 1092.1 1263 5 059 4 951 34 522 4 05 40.3 2.36 30.6 0.54 27.302 31.878 36.352 40.726 45.001 1250.1 1513 3 547 3.432 34.528 4.02 40.1 24.3 0.77 27.468 32.083 36.596 41.006 45.317 1495.9 2 872 34 633 4.04 1757 2.56 20.0 3.002 37.1 1.30 27.604 32.234 36.760 41.184 45.507 1736.6 2007 2.640 34.722 4.46 2 789 2 33 24 6 44.2 0.47 27.696 32.331 36.862 41.292 45.620 1982.1 2 382 34.814 5.08 2508 2.575 35.9 0.54 27.791 32.433 36.971 41.406 45.740 2475.1 2.04 19.0 0.47 27.831 32.481 37.027 41.471 45.813 2970.2 0.94 27.841 32.500 37 055 41.507 45.858 3398.1 2 291 51.3 1.96 25.0 55.6 2.04 24.3 3014 2.055 34.829 5 24 2 007 1 732 34 810 5 24

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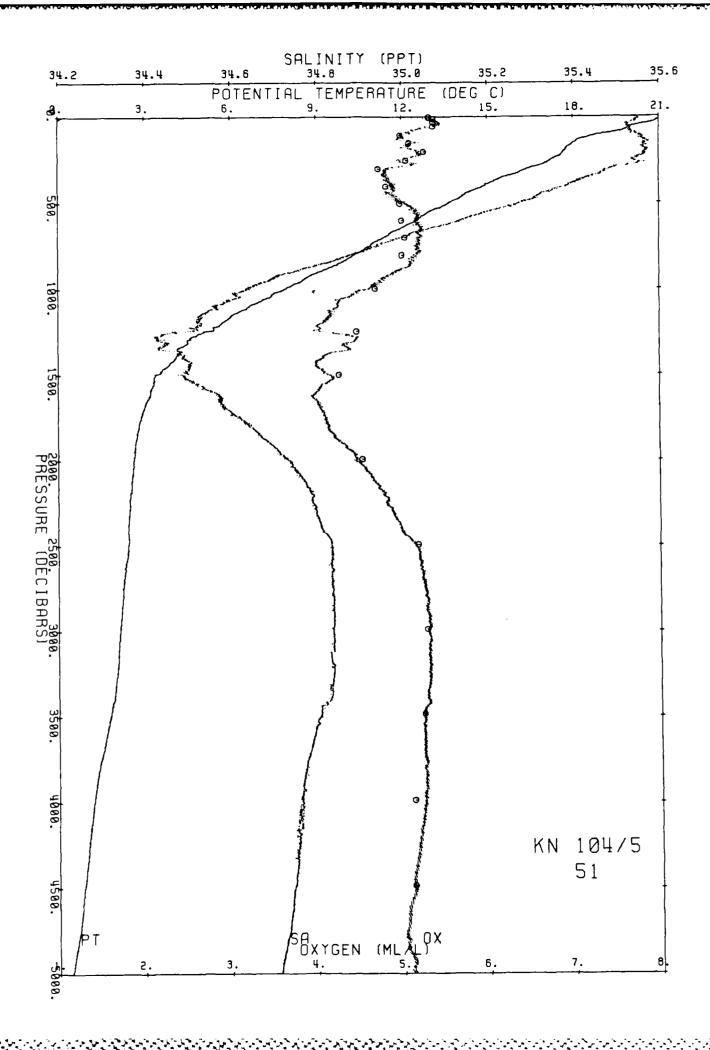


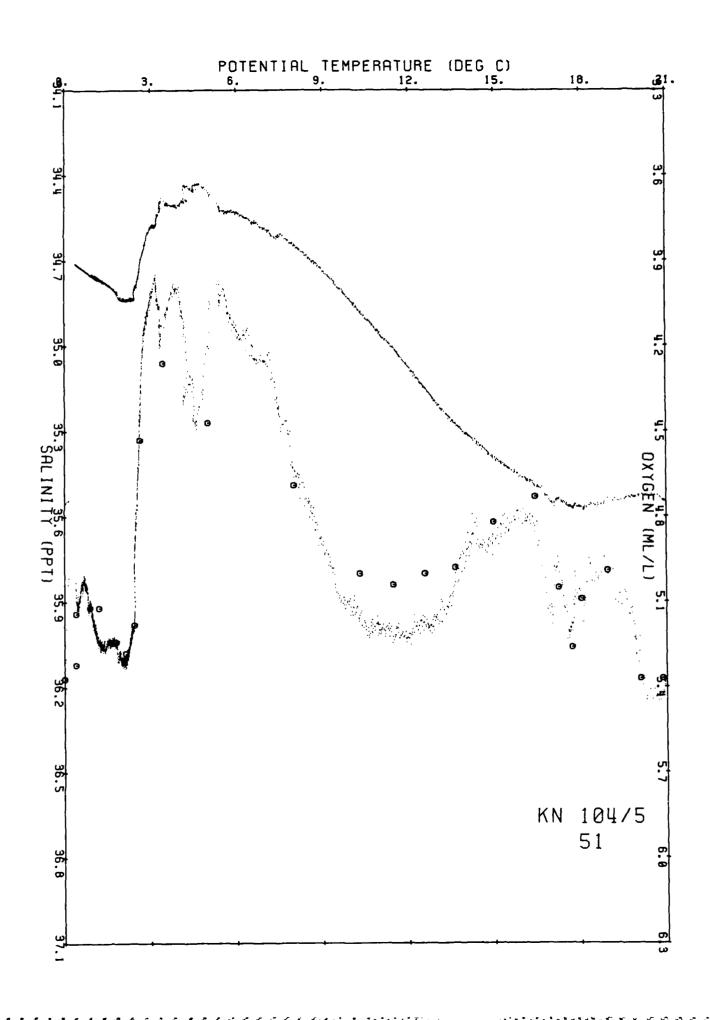


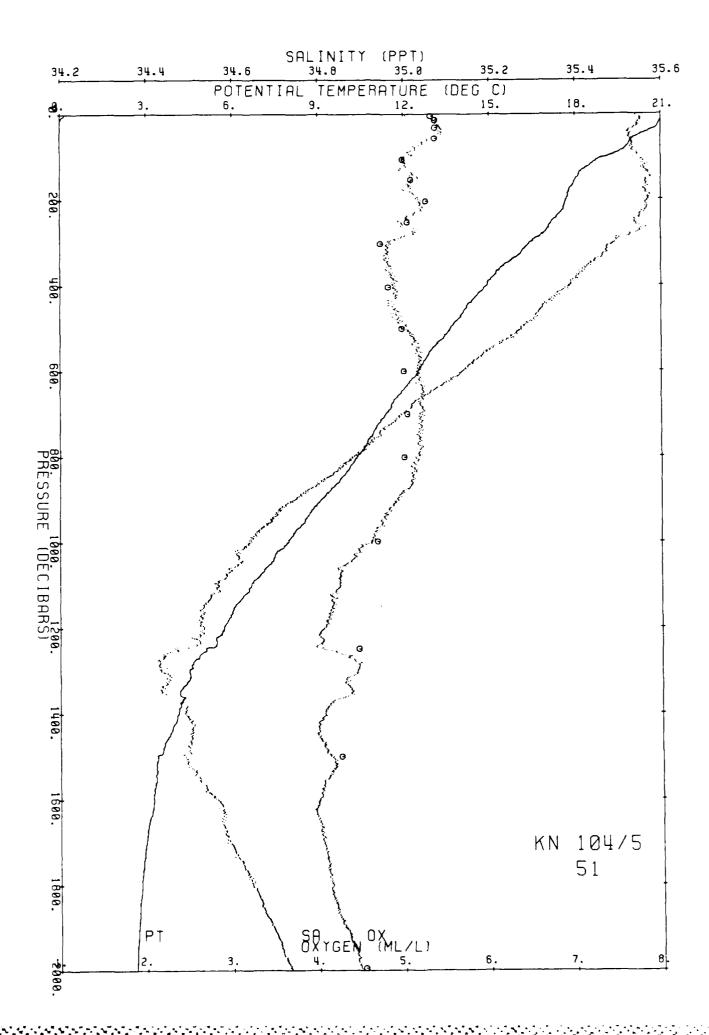


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51 Ship KN Cruise 1045 Station Cast 1 DT 44.32 S 24 14.28 E Start 36 83/12/ 1 at 1149 End 3 8 43.53 S 24 16.05 E 1548 a t. 05 **S**3 TE ox SO 31 **S2** 0 21.148 21.148 35.542 5.0 99.5 24.868 29.119 33.277 37.345 41.325 307.4 0.00 5.3 105.1 24.909 29.162 33.322 37.391 41.373 303.8 10 21.028 21.027 35.553 0.3 10.0 20 20.945 20.942 35.547 5.4 106.4 24.928 29.182 33.343 37.414 41.397 302.5 30 20.880 20.875 35.543 5.4 107.1 24.943 29.198 33.36G 37.432 41.416 301.4 5.4 106.2 25.013 29.273 33.440 37.516 41.504 295.2 40 20:575 20:568 35:526 . 12 50 20 228 20 219 35.527 5.4 104.8 25.107 29.372 33.544 37.625 41.619 286.6 5.3 102.6 25.179 29.449 33.624 37.709 41.706 280.1 5.2 101.3 25.199 29.469 33.646 37.732 41.730 278.6 60 19 968 19 957 35 531 18 59 A 70 19.904 19.892 35.534 5.1 99.1 25.235 29.508 33.686 37.774 41.773 275.6 5.1 97.5 25.297 29.573 33.755 37.845 41.848 270.0 80 19.778 19.763 35.537 90 19.563 19.546 35.544 . 26 4.42 89.8 95.4 25.400 29.682 33.869 37.966 41.974 260.6 5.0 94.7 25.574 29.865 34.063 38.169 42.186 244.8 5.1 95.9 25.674 29.972 34.175 38.287 42.309 235.9 120 18.545 18.524 35.563 5 23 119 7 140 18.177 18.153 35.573 . 39 3.98 139.6 5.1 95.3 25.709 30.010 34.216 38 330 42 356 233 3 5.1 94.9 25.753 30.057 34.266 38 383 42.411 229.8 5.2 96.5 25.781 30.087 34.297 38.416 42.445 227.8 160 18.008 17.980 35.563 180 17.835 17.805 35.564 200 17.743 17.709 35.570 48 179 4 220 17.635 17.598 35.567 5.2 96.8 25.806 30.113 34.326 38.446 42.477 226.1 5.0 93.2 25.847 30.158 34.374 38 498 42.532 223.0 57 1 99 219 3 240 17.410 17.369 35.547 239.2 260 17.148 17.105 35.551 5.0 91.6 25.913 30.229 34.449 38.577 42.616 217.3 259.1 280 16.911 16.865 35.529 300 16.469 16.421 35.493 5.1 93.9 25.953 30.273 34.498 38.630 42.672 214.0 70 2 55 279.0 4.8 87.8 26.030 30.358 34.590 38.730 42.779 207.2 4.8 87.0 26.077 30.410 34.647 38.791 42.845 203.3 4.8 85.7 26.141 30.479 34.722 38.873 42.932 197.8 4.9 86.5 26.214 30.560 34.810 38.967 43.034 191.3 4.8 85.7 26.225 30.603 34.858 39.019 43.090 188.2 320 16:201 16:149 35:472 340 15:847 15:793 35:448 79 318.8 .83 3.20 338.7 360 15.446 15.390 35.425 380 15.200 15.141 35.403 400 14.996 14.935 35.387 90 2.51 378.5 4.9 86.3 26.285 30.640 34.899 39.064 43.138 185.5 .94 4.9 85.1 26.393 30.761 35.033 39.211 43.297 176.4 1.03 5.0 85.8 26.472 30.852 35.134 39.322 43 419 169.9 1 12 398.4 2.33 450 14.284 14.218 35.325 448 1 500 13.724 13.652 35.274 2.30 497.8 13.057 12.980 35.202 5.2 87.2 26.554 30.947 35.242 39.443 43.552 163.0 5.1 86.2 26.598 31.000 35.305 39.515 43.632 159.7 1.28 5.2 86.5 26.653 31.067 35.384 39.605 43.733 155.2 1 36 600 12.588 12.506 35.137 597 1 650 12 010 11 924 35.062 646 8 5.2 84.9 26.703 31.129 35.457 39 689 43.828 151.0 1.44 5.2 83.7 26.753 31.190 35.527 39.769 43.917 146.8 1.51 5.1 82.0 26.796 31.244 35.593 39.846 44.005 143.1 1.58 700 11.461 11.371 34.993 750 10.992 10.898 34.947 696 1.90 746 . 1 800 10.458 10.360 34.879 4.9 76.5 26.903 31.379 35.756 40.035 44.219 133.0 1.72 4.6 69.7 26.998 31.500 35.903 40.207 44.416 123.7 1 85 4.2 62.3 27.126 31.659 36.092 40.425 44.662 110.3 1 97 4.1 58.2 27.221 31.779 36.234 40.590 44.848 100.3 2.07 4.5 62.1 27.283 31.872 36.357 40.742 45.029 92.1 2.17 900 9.207 9.105 34.746 8.064 7.958 34.640 2.02 894 8 1000 994 0 1 94 1100 6.769 6.662 34.569 5.810 5.702 34.533 1200 1.96 1192.0 4.498 34.434 1 300 4.605 4.1 56.2 27 371 31.970 36.465 40 889 45.154 4.2 56.4 27.445 32.062 36.576 40 988 45.300 4.0 54.1 27.515 32.135 36.652 41.067 45.383 4.104 34.492 3.381 34.493 83.6 2.26 75.1 2.34 1.78 1389 1400 4.216 1500 3.494 1.77 1488.7 1600 3.356 3.235 34.563 69.0 2.41 1.52 1587 4.1 54.6 27.556 32.183 36.706 41.127 45.449 1700 3.114 2.988 34.586 64.9 2.47 1.27 1686.3 2.821 34.644 4.2 55.6 27.617 32.248 36.776 41.201 45.526 2.954 59.3 2.54 1.46 1784.9 1800 2.836 2.773 2.695 34.692 2.625 34.736 4.3 57.4 27.667 32.301 36.831 41.259 45.587 4.4 59.2 27.708 32.344 36.875 41.305 45.634 1900 54.9 2.59 1.31 1883.6 51.5 2.65 1.17 1982.2 2000 2.722 2.566 34.766 4.6 61.9 27.737 32.374 36.907 41.338 45.668 2100 1.00 2080 2200 2 681 2.516 34.789 4.8 63 7 27.760 32.398 36.932 41.364 45.695 4.9 65.0 27.772 32.412 36.947 41.380 45.712 47.5 2.75 46.9 2.79 .88 2179.2 2.469 34.799 .68 2277 2300 2.643 5.0 66.3 27.784 32.424 36.960 41.394 45.727 5.2 68.6 27.804 32.444 36.979 41.413 45.746 5.2 69.3 27.809 32.451 36.990 41.425 45.761 2.436 34.810 2.438 34.835 2400 2.619 46.3 2.84 .65 2376.0 2500 2 630 45.2 2.89 .77 2474.4 2.547 2.346 34.832 44.8 2.93 .60 2572.7 2600 5.2 69.4 27.818 32.463 37.002 41.440 45.777 5.3 69.9 27.823 32.469 37.010 41.449 45.787 44.2 2.97 2700 2.491 2.282 34.837 65 2671.0 2.230 34.838 2.448 53 2769.2 2800 2900 2.412 2.184 34.839 5.3 70.2 27.828 32.475 37.017 41.457 45.797 43.9 3.06 70.0 27.832 32.480 37.024 41.465 45.806 43.8 3.11 43.7 3.19 3000 2.368 2.131 34.838 5.3 49 2965 5 2.045 34.839 70.0 27.839 32.490 37.036 41.480 45.823 3200 2.300 48 3161 6 1.908 34.831 1.651 34.794 5.3 69.5 27.844 32.499 37.049 41.496 45.842 5.2 68.3 27.834 32.496 37.054 41.508 45.861 3400 2.181 43.3 3.28 51 3357.5 3600 1.940 43.1 3.37 49 3553.3 3800 1 689 1.386 34.773 5.3 68.1 27.837 32.506 37.071 41.533 45.893 4000 1.518 1 198 34.765 5.2 67.7 27.843 32.519 37.089 41.556 45.920 39.8 3.53 65 3944 3 1.060 34.756 66.7 27.846 32.525 37.099 41.570 45.938 52 4139.5 4200 1.399 39.1 3.61 4400 .938 34.750 .806 34.741 5.1 65.8 27.849 32.532 37.109 41.583 45.955 5.1 64.9 27.850 32.537 37.118 41.596 45.971 1.295 38.3 3.69 53 4334.6 4600 37.5 3.77 1.183 .52 4529.5 1.040 644 34.728 64.5 27.850 32.542 37.128 41.610 45.990 36.3 3.84 57 4724.2 4800 5.1 64.8 27.850 32.548 37.140 41.628 46.013 63.8 27.849 32.548 37.142 41.631 46.017 5000 .852 440 34.713 5.1 34.4 3.91 66 4918 R .398 34.709 5.0 5058 .816 34.1 3.93 .53 4975.2 PR TE PT 02 SI PO N3 N2 NH4 SO 31 4 21.399 21.398 35.570 5.32 3.6 0.14 0.7 0.01 0.50 24.820 29.067 33.222 37.286 41.263 14 21.005 21.002 35.554 5.37 4.6 0.13 0.9 0.45 24.916 29.170 33.330 37.400 41.382 4.9 0.12 1.1 4.9 0.11 1.4 0.41 24.965 29.221 33.383 37.455 41.439 0.33 25.149 29.417 33.590 37.673 41.669 32 20 855 20 849 35 563 5 37 56 20.091 20.081 35.534 5.37 4.9 0.11 1.4 0.33 29.47 29.417 33.590 37.673 41.694 64.6 0.26 2.6 0.02 0.36 25.707 30.006 34.212 38.325 42.350 4.5 0.25 25. 0.02 0.37 25.792 30.097 34.308 38.426 42.456 45. 0.25 33 3.3 0.25 0.27 35 25.894 30.207 34.425 38.551 42.588 4.3 0.56 4.6 0.51 26.032 30.360 34.592 38.731 42.781 7.2 0.60 7.2 0.41 26.288 30.642 34.900 39.064 43.138 50 0.74 6.7 1 0.26 481 30.860 35.143 3.33 33.34 34.88 106 18.969 18.950 35.555 4.99 153 18:052 18:025 35:574 5:09 152.2 204 17.733 17.698 35.580 5,26 253 17.279 17.237 35.567 5.05 303 16 472 16.423 35.496 4.73 300.0 403 15 031 14.969 35.400 4.82 501 13.703 13.631 35.279 4.98 600 12.657 12.375 35.151 5.00 5.0 0.74 6.7 1.50 26.481 30.860 35.143 39.332 43.429 496 6 0.35 26.595 30.996 35.300 39.508 43.624 0.86 8.2 701 11.556 11.465 35.011 5.04 6.7 0.95 0.66 26.699 31,123 35.449 39.680 43 817 802 10 397 10 299 34.875 5.00 1.20 11.9 0.40 26.803 31.253 35.603 39.857 44.017 8.5 793.9 0.32 26.995 31.497 35.899 40 203 44.410 987.6 0.40 27.253 31.828 36.301 40 674 44.948 1235.4 0.32 27.432 32.047 36.560 40.971 45.282 1483.3 997 8 097 7.991 34.643 4.69 5.002 34.467 4.47 3.436 34.483 4.26 1 248 5.109 33.9 2.31.28.8 1500 3.550 36.4 1995 2.771 2.623 34.737 4.53 43.2 2.28 22.2 0.36 27.709 32.345 36.876 41.306 45.635 1970.6 0.74 27.804 32.444 36.980 41.414 45.747 2460.3 2493 2 619 2.427 34.834 5.18 40.0 1.96 20.5 0.38 27.834 32.482 37.026 41.467 45.807 2945.5 43.6 58.8 3484 2.071 1.791 34.820 5.24 2.01 17.6 0.38 27.844 32.502 37.056 41.506 45.855 3430.7 1.196 34.771 5.12 3988 1.515 0.50 27.848 32.524 37.094 41.561 45.925 3922.5 2.22 22.0 4487 1 250 0.884 34.751 5.12 2.31 0.51 27.853 32.538 37.117 41.592 45.965 4407 0.397 34.712 5.14 60.4 2.44 22.6 0.30 27.852 32.551 37.144 41.633 46.020 4967.1







278.9 298.8 318.7 338.6 358.5 497.6 1100 4.421 4.334 34 433 4.5 62.4 27.300 31.893 36.383 40.772 45.062 87.9 1.66 1.78 1092 1200 3.937 3.845 34.462 4.4 60.1 27.374 31.979 36.482 40.882 45.184 80.6 1.74 1.66 1191.7 1300 3.757 3.658 34.518 4.1 56.2 27.438 32.047 36.554 40.959 45.264 75.0 1.82 1.47 1290.6 1400 3.453 3.349 34.574 4.0 54.6 27.512 32.130 36.644 41.056 45.369 67.9 1.89 1.63 1389.5 1500 3 169 3.060 34.599 4.0 53.5 27.560 32.185 36.706 41.125 45.445 63.3 1.95 1.34 1488 4 1600 2.930 2.814 34.638 4.2 55.7 27.613 32.244 36.772 41.197 45.522 58.2 2.02 1.40 1587.1 1700 2.877 2.753 34.687 4.3 57.0 27.658 32.290 36.819 41.245 45.572 54.6 2.07 1.20 1685.9 1800 2.780 2.649 34.715 4.4 59.0 27.689 32.324 36.856 41.285 45.613 51.9 2.13 1.06 1784.5 1900 2.731 2.592 34.759 4.6 61.0 27.729 32.366 36.898 41.328 45.658 48.7 2.18 1.15 1883.2 2000 2.714 2.567 34.789 4.7 62.5 27.756 32.392 36.925 41.356 4 686 46.8 2.22 .92 1981.7 2.507 34.812 4.8 64.1 27.779 32.417 36.951 41.383 45.715 2100 2.663 45.1 2.27 91 2080 3 2.468 34.815 64.9 27.785 32.424 36.959 41.392 45.725 2200 2.632 4.9 45.0 2.31 .50 2178.8 66.4 27.798 32.438 36.975 41.409 45.743 2300 2.414.34.825 5.0 2.587 44.2 2.36 .70 2277.2 2400 2 527 2.346 34.830 66.9 27.807 32.450 36.988 41.424 45.759 5.0 43.6 2.40 .66 2375.6 2500 2 467 2 277 34 840 67.5 27.821 32.465 37.005 41.443 45.780 5.1 42.6 2.45 75 2473.9 2 381 2.183 34 840 67.8 27.829 32.476 37.018 41.458 45.798 2600 5.1 41.9 2.49 .66 2572.2 67.9 27.833 32.482 37.028 41.470 45.812 2700 2 293 2.087 34 835 5.1 41.5 2.53 .58 2670.5 2.261 2.047 34.829 67.5 27.831 32.482 37.028 41.472 45.815 2800 5.1 42.0 2.57 . 22 2768.7 2900 2 226 2 002 34 830 67.2 27.836 32.488 37.035 41.480 45.824 5.1 41.9 2.61 49 2866.9 2 133 1.902 34.822 67.2 27.837 32.492 37.042 41.490 45.836 3000 5.1 .55 2965.0 41.6 2.66 3200 1.987 1.739 34.807 66.7 27.838 32.497 37.052 41.504 45.855 5.1 41.3 2 74 .48 3161.1 3400 1 790 1.526 34.809 5.2 67.1 27.855 32.521 37.082 41.539 45.895 39.0 2.82 .75 3357.0

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<u> 1881 (S. 1886)</u> 1881 (S. 1886)

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5.3

PR TE PT SA 02 31 PO N 3 N 2 NH4 31 SO S 2 S 3 DE 5.1 0.14 0.8 0.01 0.31 25.184 29.452 33.626 37.710 41.705 4 20.049 20 048 35.569 5.43 13 19 970 19 968 35 567 5.47 3.3 0.12 0.6 0.31 25.204 29.473 33.648 37.733 41.729 12.4 32 19 049 19 043 35 546 5.47 0.25 25.429 29.712 33.902 38.000 42.010 3.7 0.14 0.6 31.5 57 18 859 18 849 35 549 5.25 5.3 0.18 1.3 0.16 0.32 25.481 29.767 33.960 38.061 42.074 56 3 106 17 793 17 775 35 537 4.80 0.36 3.3 0.04 0.20 25.740 30.044 34.254 38.372 42.400 6.7 105.0 0.39 4 5 0.02 0.30 25.920 30.237 34.458 38.587 42.627 0.52 4 7 0.23 0.31 26.146 30.492 34.743 38.900 42.967 155 17 064 17 038 35 539 4.88 5.8 153.6 205 15 431 15 399 35 339 5.03 6.5 203.7 255 13 703 13 667 35 150 5.54 0.57 4 6 0.12 0.20 26.374 30.753 35.036 39.225 43.322 6.1 252.4 306 13 561 13 518 35.253 4.96 0.70 7.1 0.01 0.24 26.484 30.866 35.151 39.342 43.441 5.3 302.9 403 12 517 12 462 35.140 5.66 6.0 0.82 10.0 0.30 26.609 31.012 35.318 39.528 43.647 399.9 452 11 896 11 837 35.059 5.51 8.2 0.91 11.8 0.20 26.667 31.083 35.401 39.624 43.754 447.7 502 10 490 10 429 34 804 4.45 6.6 1.00 14.0 0.20 26.725 31.172 35.521 39.773 43.931 497.7 602 10:104 10 032 34:829 5:17 8.1 1.23 8 3 0.26 26.813 31.269 35.625 39.885 44.051 596.5 703 8 865 8 787 34.707 4.73 10.5 1.47 12 9 0 28 26.923 31.407 35.790 40.076 44.267 696.8 802 7 570 7 489 34 585 4.49 1.74 21 5 15.3 0.22 27.023 31.537 35.951 40.266 44.484 901 5 909 5 828 34.453 4.91 2.01 18 7 0.58 27.142 31.697 36.150 40.504 44.759 1001 4 808 4 726 34.395 4.14 27.4 2.22 28.9 0.20 27.227 31.810 36.290 40.670 44.951 1251 3 745 3 650 34 471 4.03 42.4 2.53 31.7 0 38 27.401 32.011 36.518 40.924 45.230 3 083 34 608 50.3 2.60 27.3 1502 3 193 0.32 27.565 32.189 36.710 41.128 45.447 1485.5 2 580 34 772 4.72 1989 2 727 48.4 2.18 25 2 0 26 27.741 32.378 36.910 41.340 45.670 1964.4 1.99 21 7 2537 2 416 2.224 34 821 5.17 44.7 0.30 27.810 32.456 36.998 41.437 45.775 2502.7 3152 2 028 1 784 34 807 5.18 45.8 2.03 18.7 0.40 27.834 32.493 37.046 41.497 45.847 3105.5 1 805 3402 1 541 34 795 5.22 67.6 2 05 26 3 0 29 27 843 32.508 37.069 41.526 45.882 3349 3954 1 305 1 007 34 751 5.19 55.6 2.24 19 0 0 33 27 845 32.526 37.102 41.574 45.944 3790.7

67.8 27.851 32.526 37.095 41.561 45.925

68.3 27.854 32.534 37.108 41.579 45.947

5.3 58.0 27.853 32.534 37.110 41.582 45.952

37.6 2.89

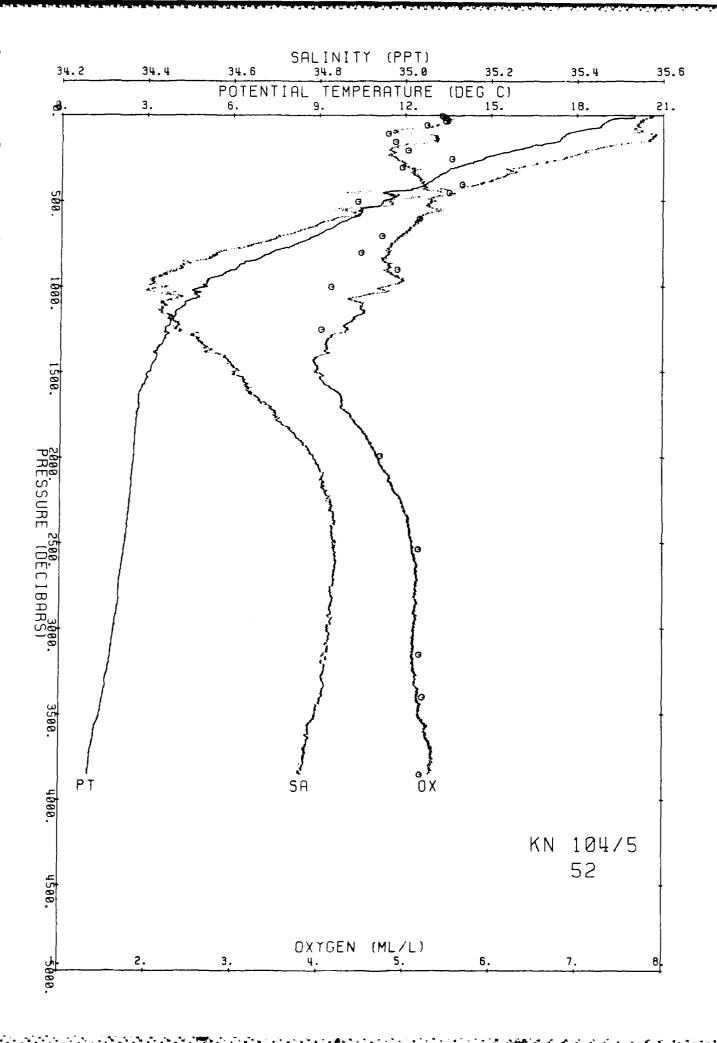
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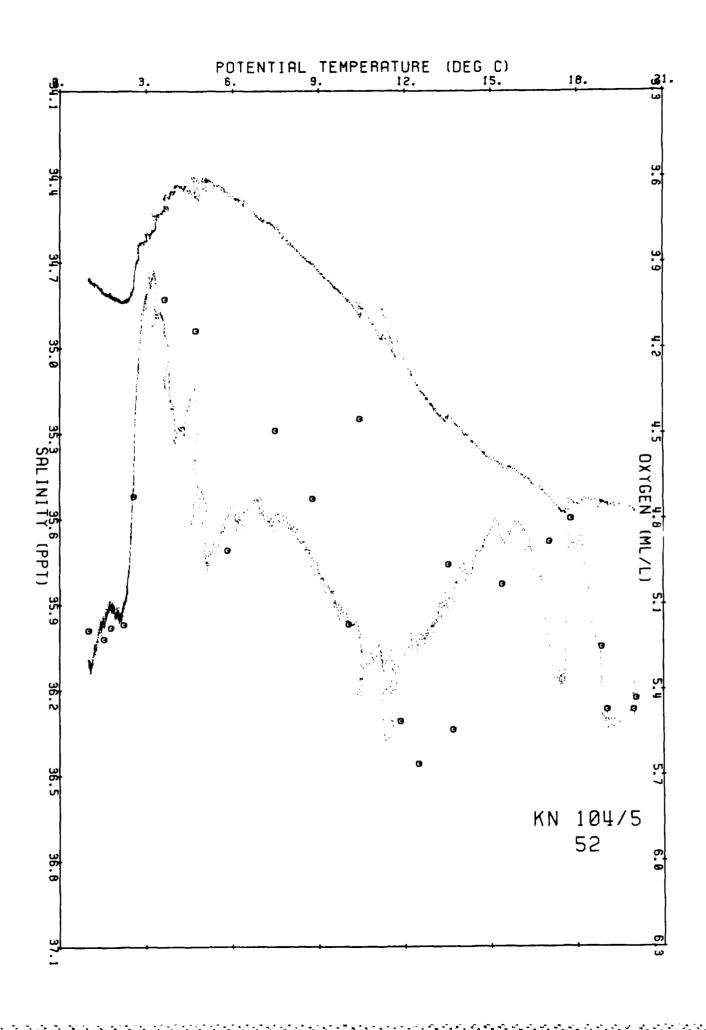
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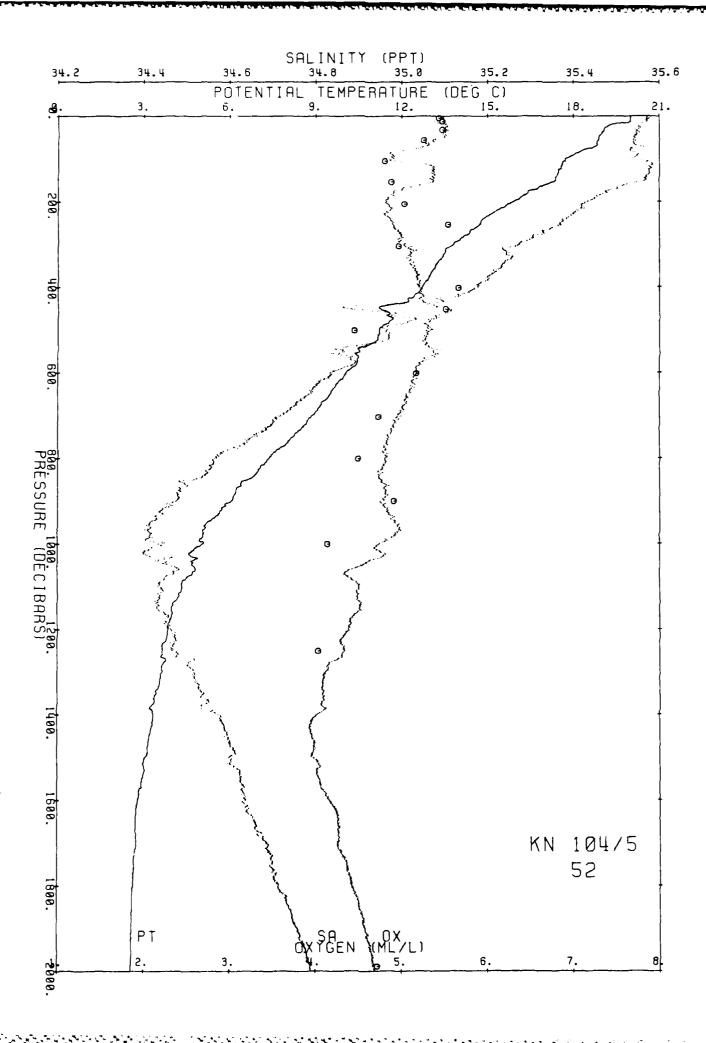
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Ship KN Cruise 1045 Station 53 Cast 1 DT 4.67 E 54.32 S 83/12/ 2 Start 37 25a t 358 End 37 53.38 S 2.5 3.73 E 640 a t PR TE PΤ so OX os S1 S 2 S 3 HZ. SA 54 AN RV DF 0 18.238 18.238 35.444 6.0 113.4 25.554 29 851 34 054 38 165 42.187 242.1 0.00 0.00 0 0 10 0 10 18.253 18.252 35.446 6.0 112.2 25.552 29.849 34.052 38 163 42.185 242.6 . 0 2 - . 75 6.1 113.4 25.791 30.104 34.323 38.449 42.485 220.3 20 17.281 17.278 35.446 05 19 9 30 16.876 16.871 35.430 6.2 114.1 25.876 30.196 34.421 38 554 42.597 212.5 07 40 16.415 16.409 35.400 6.1 109.8 25.962 30 290 34.523 38.663 42 714 204.7 09 50 15.743 15.735 35.362 6.0 106.8 26 087 30.428 34.673 38.824 42.886 193.1 .11 6 29 60 14.528 14.519 35.266 5.7 100.1 26.283 30.646 34.913 39 085 43.167 174.7 7 85 59 A 13 97.1 26 374 30 747 35.023 39.205 43.296 166 3 70 14.015 14.005 35.242 5.6 15 5 36 80 13.711 13.700 35.225 94.5 26.425 30.803 35.085 39 273 43.369 161 8 5 5 16 4.00 79 90 13 402 13 390 35 181 5.5 93.6 26.455 30.840 35 127 39 321 43.423 159.2 18 3 09 89 100 13 113 13 100 35 126 5.5 93.2 26 471 30 862 35.156 39.355 43.462 157.9 19 2 31 99 6 92.9 26 531 30.934 35.240 39 451 43 569 152.7 120 12.501 12.485 35.045 5.6 . 22 3 09 119 140 12.118 12.100 34.990 90 7 26 563 30 974 35 288 39 506 43 632 150 1 5 5 25 2 28 139 4 160 11.953 11.932 34.989 5.5 91.3 26.594 31.009 35.326 39.548 43.676 147 6 . 28 2 23 159 180 11.808 11.785 34.982 5.4 89.6 26.617 31.034 35.354 39 579 43.710 146.0 31 1.90 179 2 200 11 609 11.583 34.958 5.5 90.2 26.636 31.058 35 382 39.611 43.746 144.6 1 78 199 34 220 11 304 11 277 34.923 5.5 89.3 26.666 31.094 35 425 39 659 43 800 142.2 2.20 37 219 0 240 11.149 11.119 34.900 5.5 89.7 26 677 31.109 35.442 39 680 43.825 141.5 238 40 1.36 260 10.846 10.814 34.850 5.6 90.1 26 693 31 132 35 472 39.716 43.866 140.4 43 1.67 258.8 280 10.512 10.478 34.794 88.8 26.709 31 155 35 502 39.753 43.911 139.1 1.68 278 46 300 10 141 10 106 34 747 87.9 26.737 31 191 35.547 39.805 43 970 136 7 5.5 2.18 48 298 9.884 9.848 34.710 85.2 26 752 31 212 35 573 39.838 44.008 135.6 320 51 1.63 318 9 763 9.724 34.721 84.4 26 781 31 244 35 608 39 875 44 047 133.2 340 5 4 2 19 338 54 9.184 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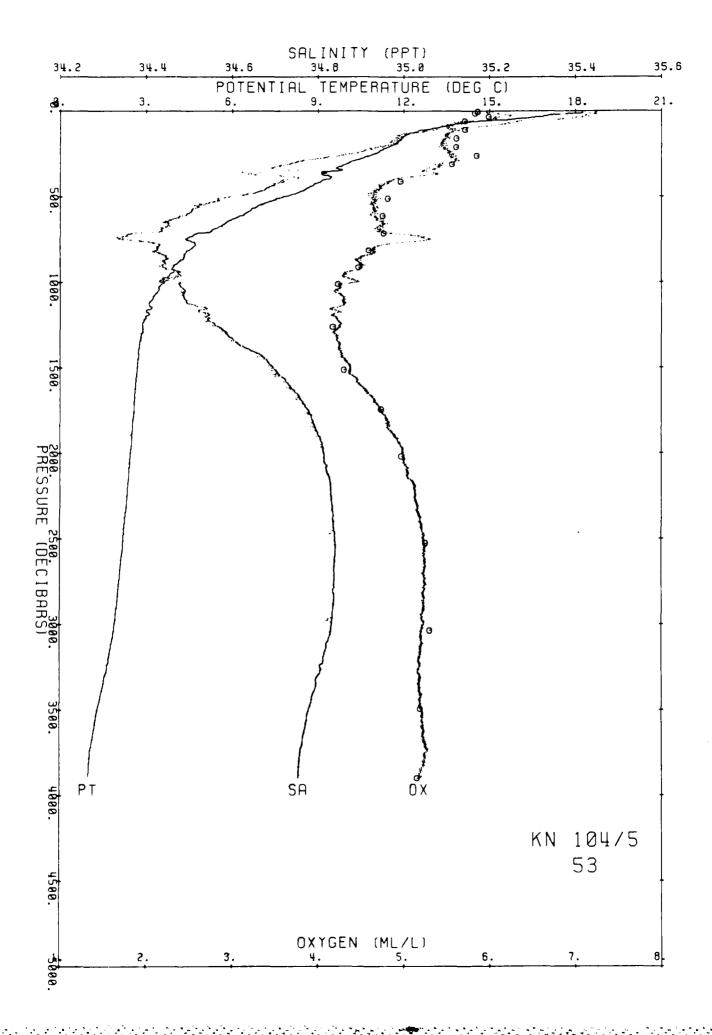
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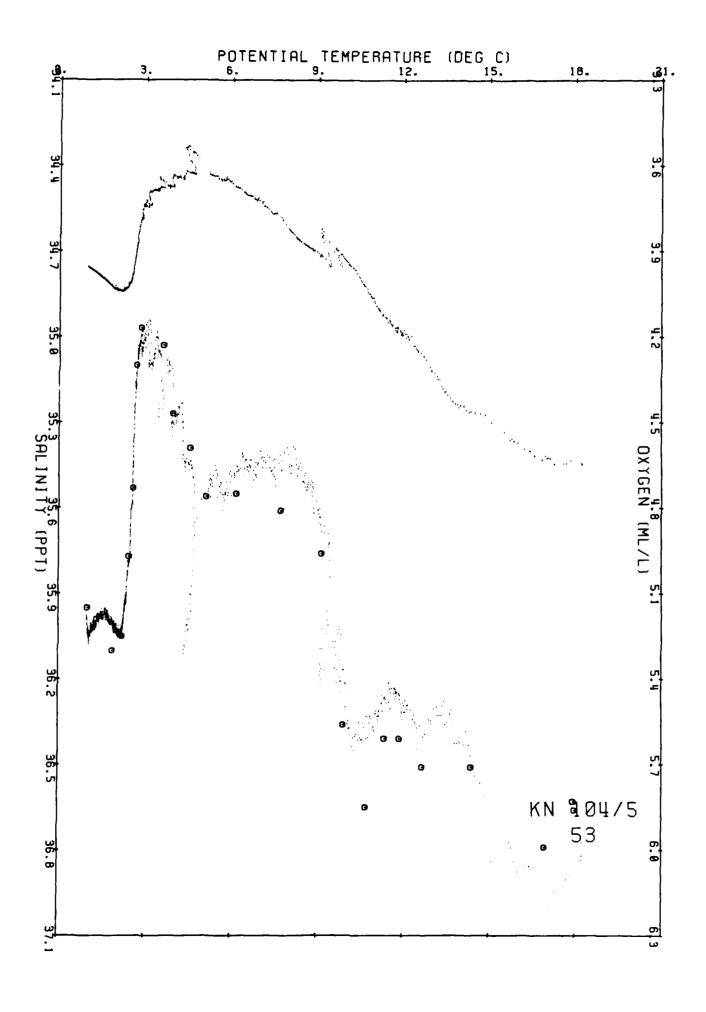
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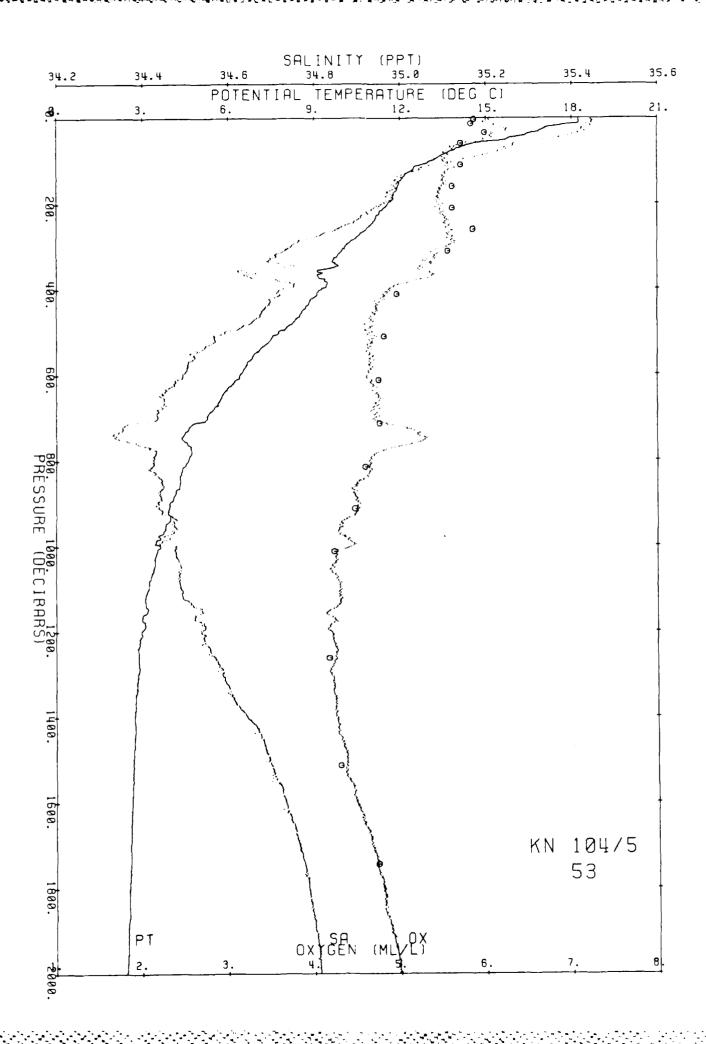
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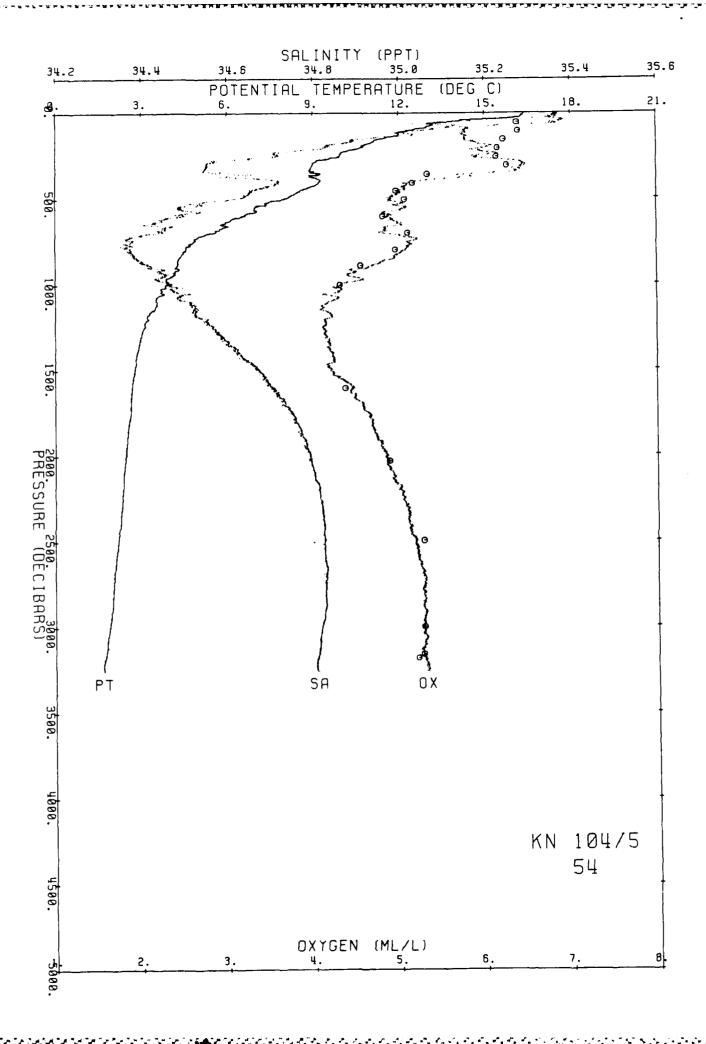
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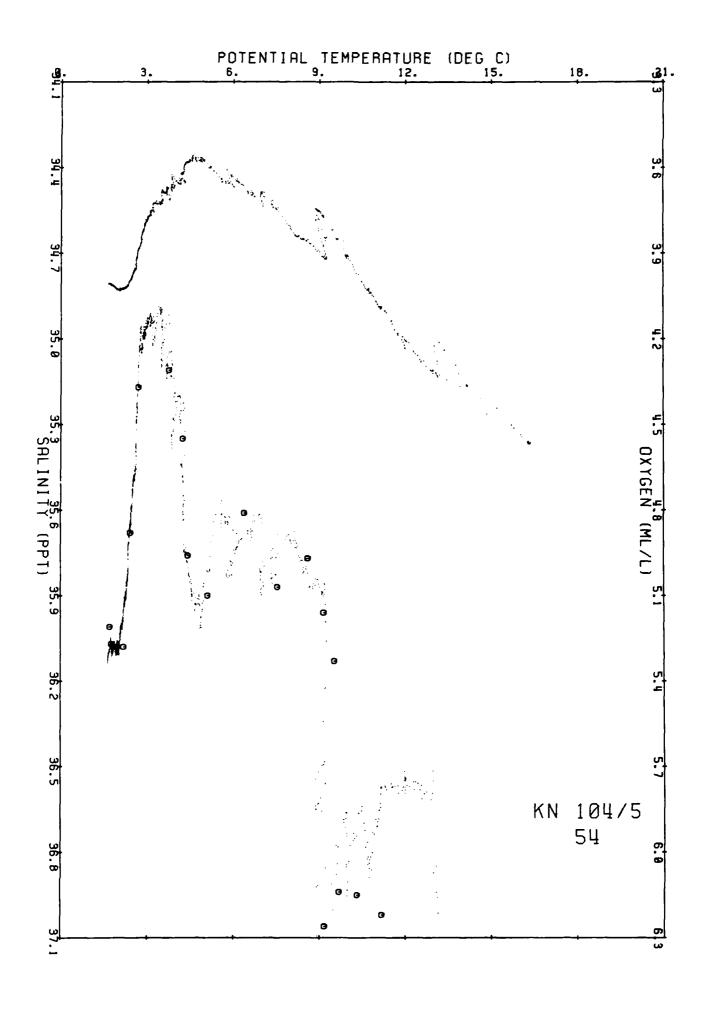


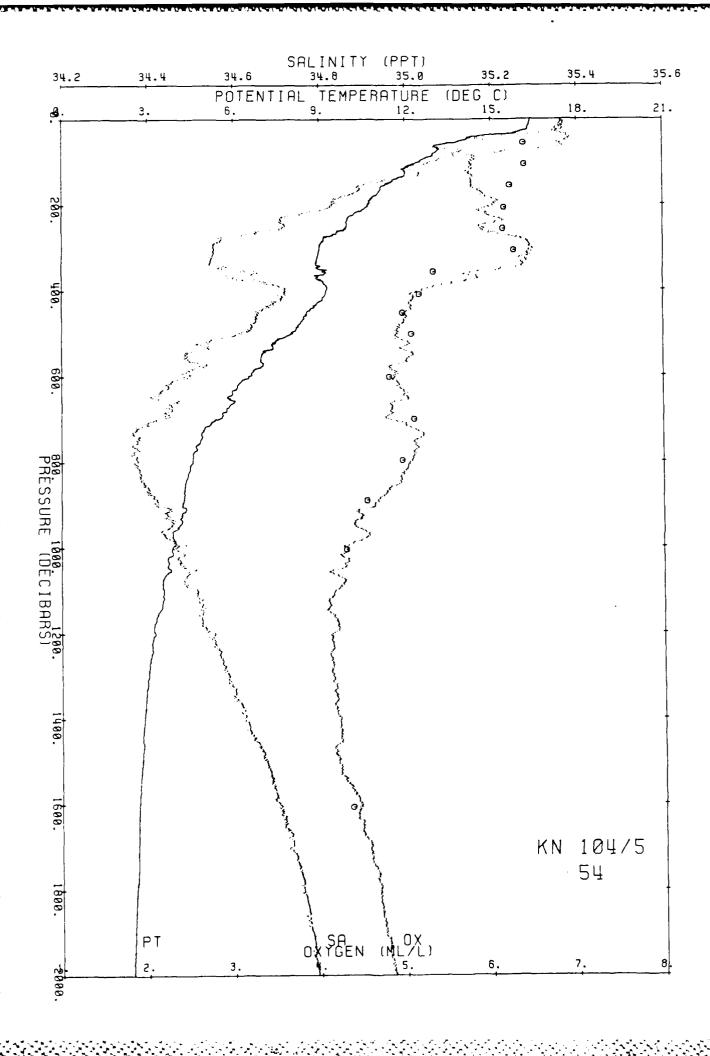




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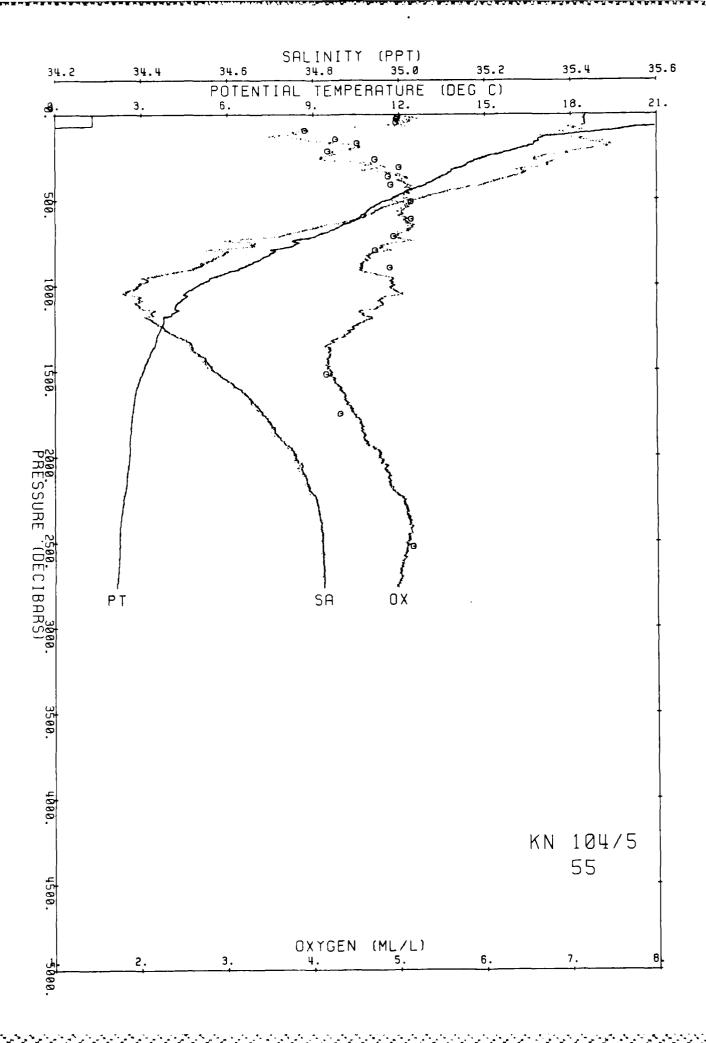
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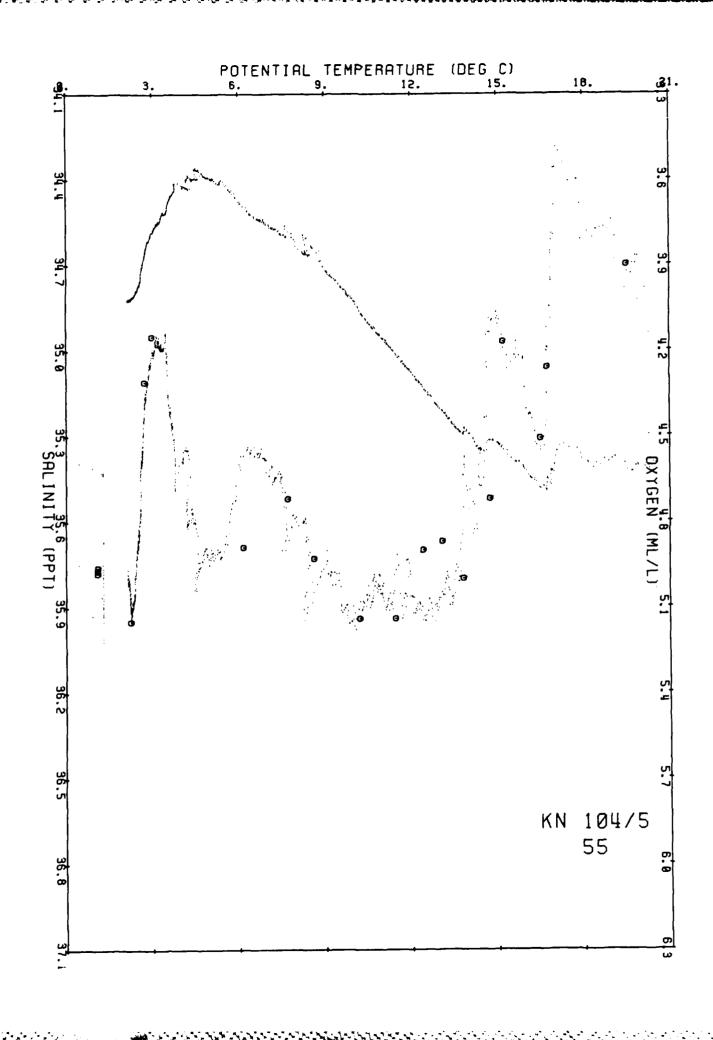
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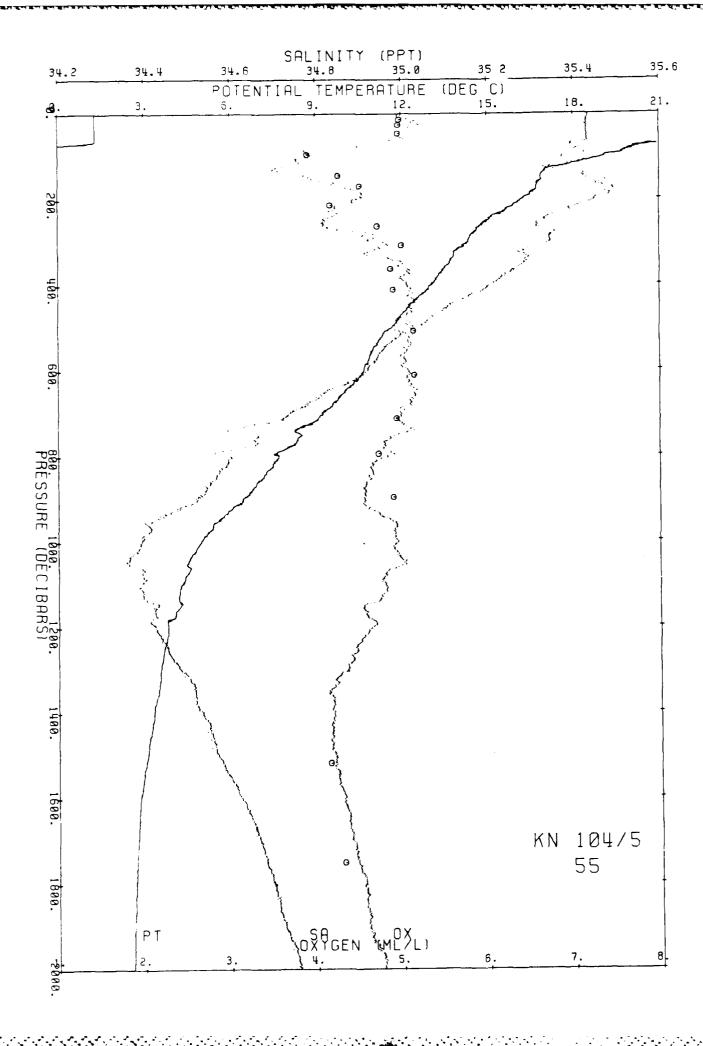
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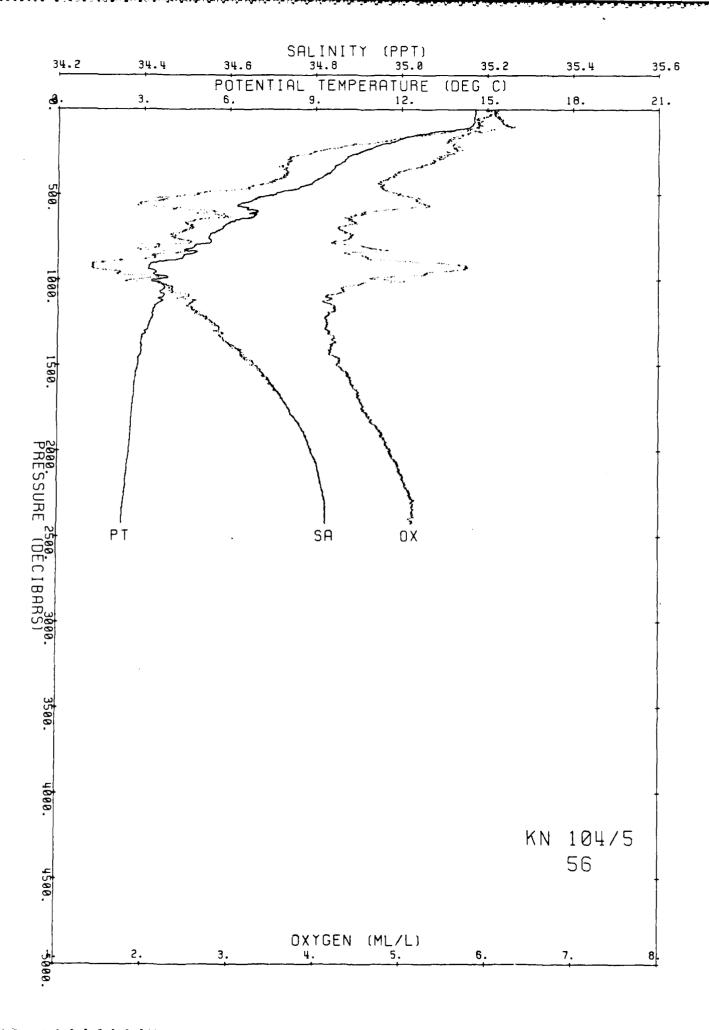


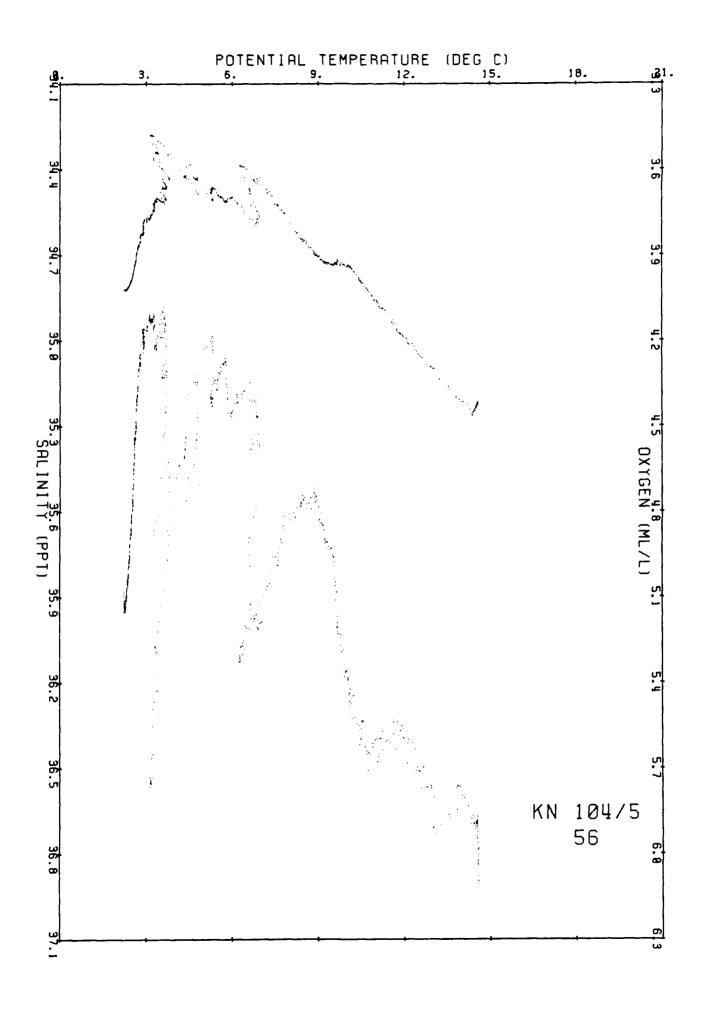


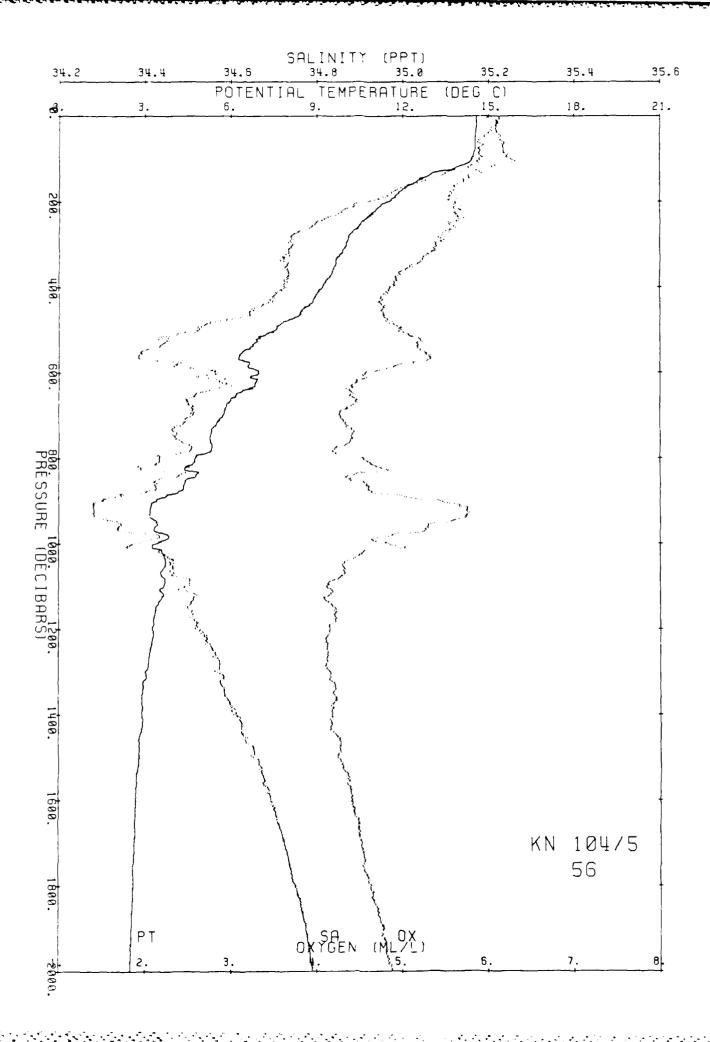


Ship KN Cruise 1045 Station 56 Cast 1 DT Start 40 10.11 S 25 40.64 E at 1447 83/13/ 3 End 40 9.98 S 25 41.78 Е a t 1829

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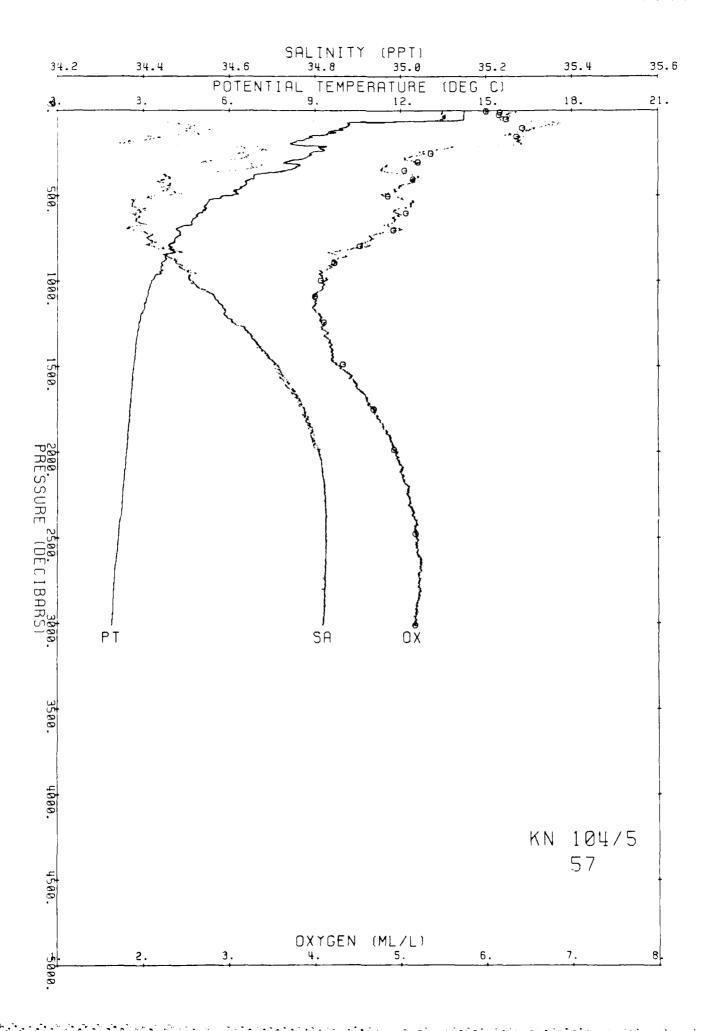


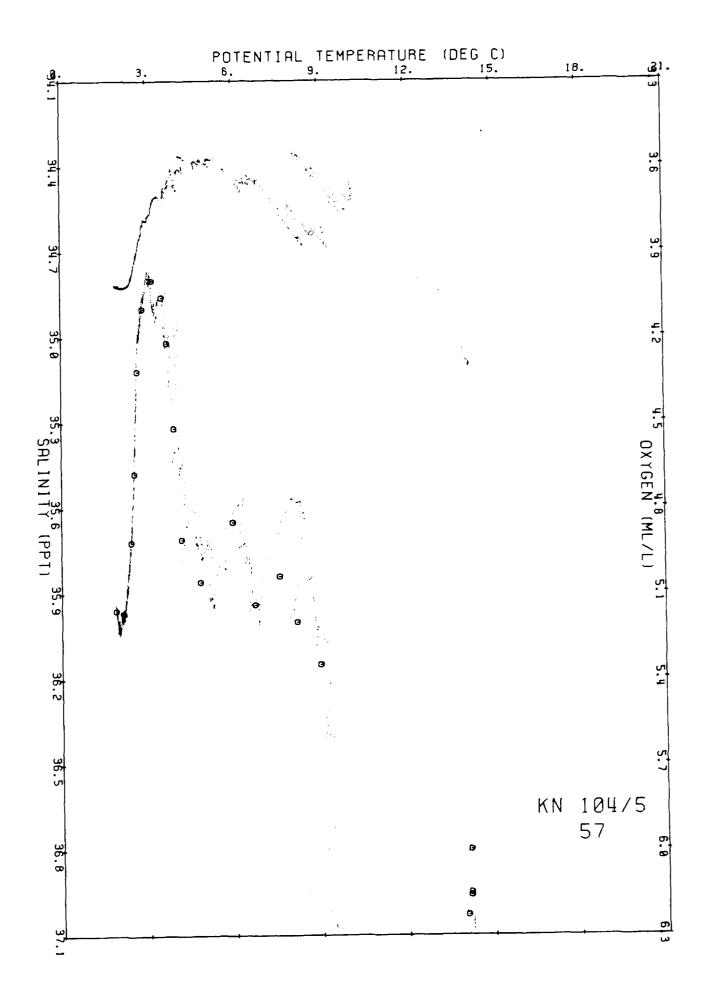


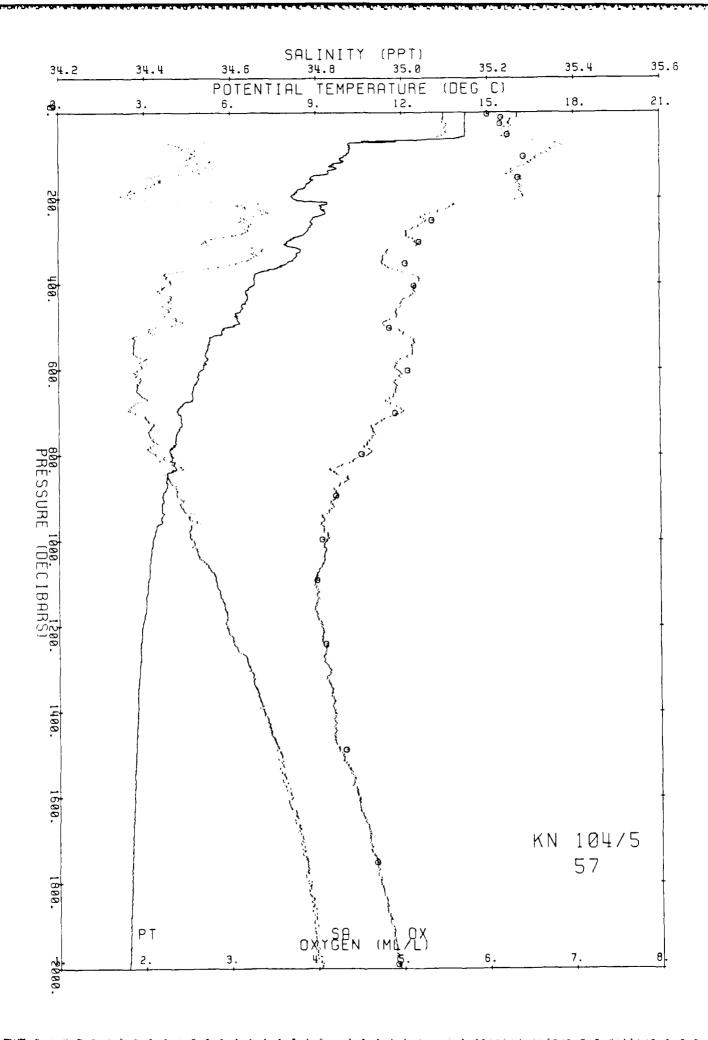
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Cast Ship KN Cruise 1045 Station 58 1 DT 40.47 E .60 S Start 42 25928 83/12/ 4 a.t End 1.35 S 25 39.41 E a t 25 TE PŢ SA ΟX os so Sı S 2 S 3 54 AN ΗZ вv DE 0 12 516 12 516 34.992 6.9 115 1 26 483 30.887 35 192 39 403 43.521 153.8 0.00 0 00 10 12 439 12 438 34.993 7.1 117 6 26 499 30.904 35 211 39.424 43.543 152.5 . 02 20 12 409 12 406 34 994 6.9 114.3 26 506 30.912 35.220 39.432 43.553 152.2 30 12 277 12.274 34.978 6.5 107 4 26.520 30 928 35.239 39 454 43 576 151.1 40 12 476 12 471 35.039 6.2 103 7 26 529 30.933 35.239 39 450 43.569 150.6 50 12 486 12 479 35 044 6 1 101 8 26.531 30.935 35 241 39.452 43.570 150.7 6.0 60 12 478 12 471 35 044 99 9 26 533 30.937 35 243 39 454 43.573 150.8 70 12 470 12 461 35 044 6 0 99 7 26 535 30.939 35.245 39 456 43.575 150.9 80 12 471 12 460 35.045 5.9 98 7 26 536 30 940 35 246 39.457 43.576 151 1 90 12 467 12 455 35 043 5.9 98 8 26 535 30.939 35 246 39 457 43.576 151.4 39 89 5.9 100 12 461 12 448 35.042 98.1 26 536 30.940 35 246 39 458 43 577 151.6 42 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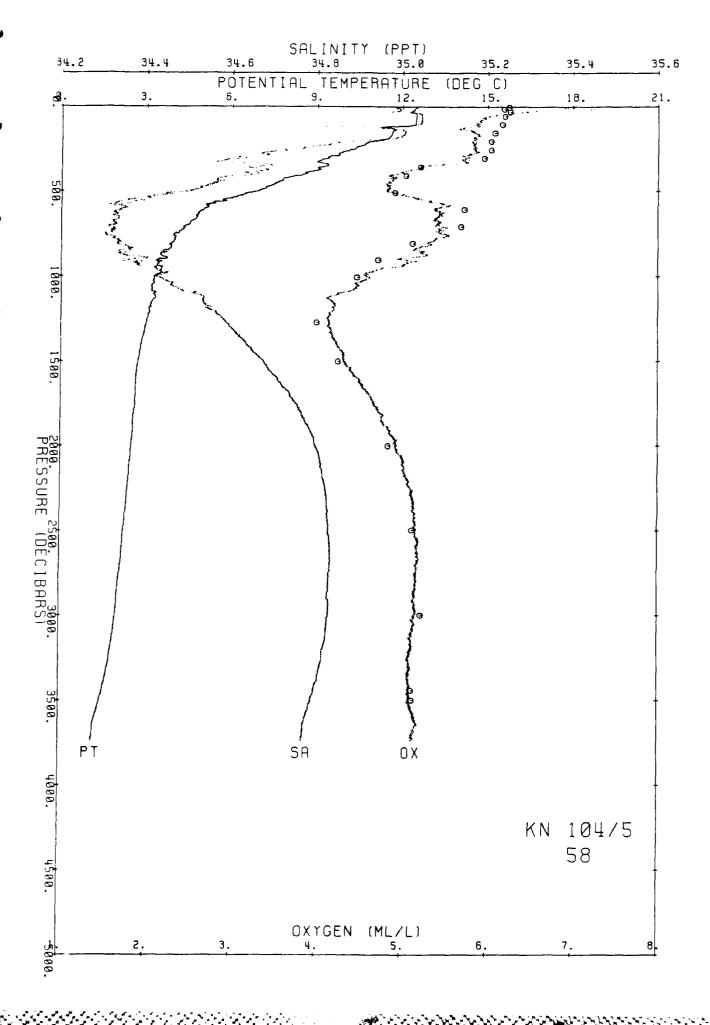
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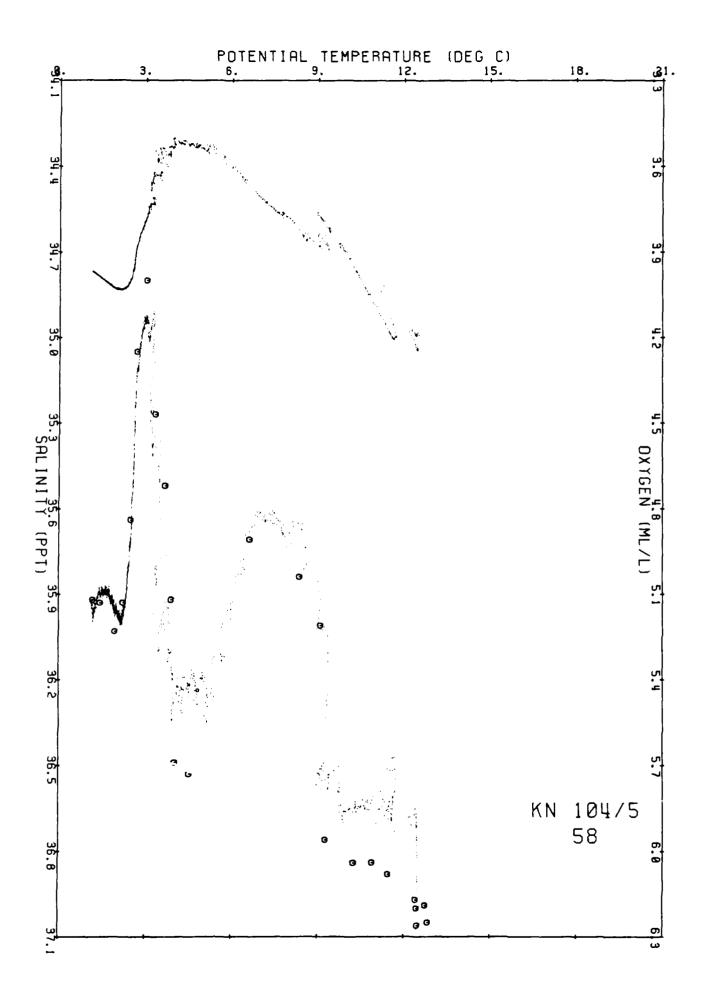
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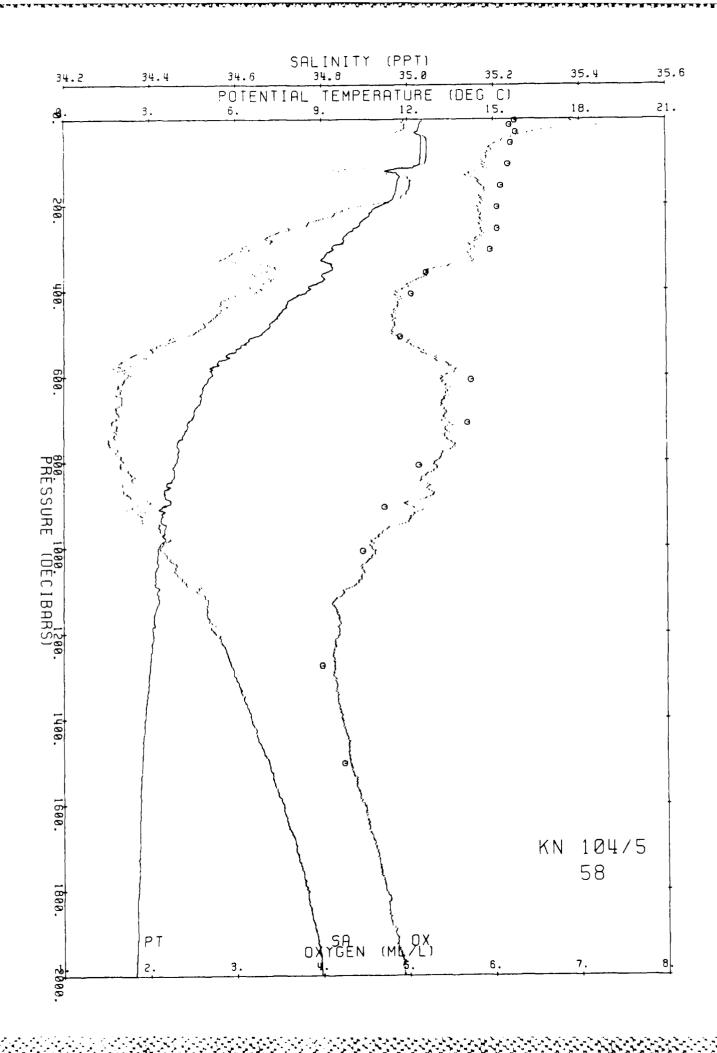
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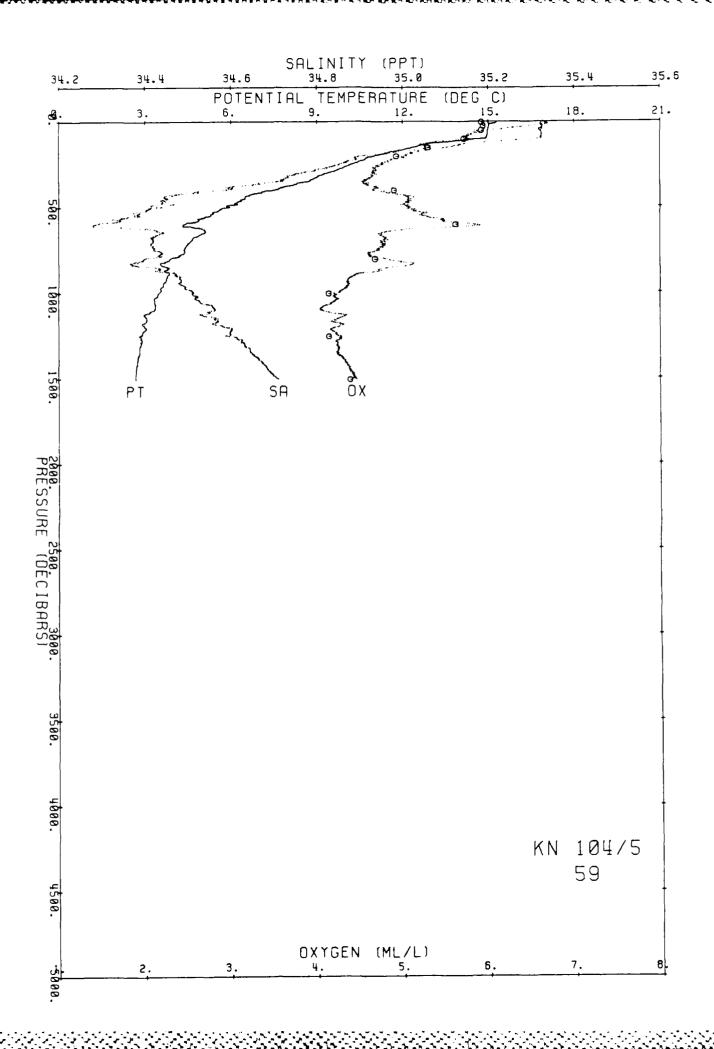


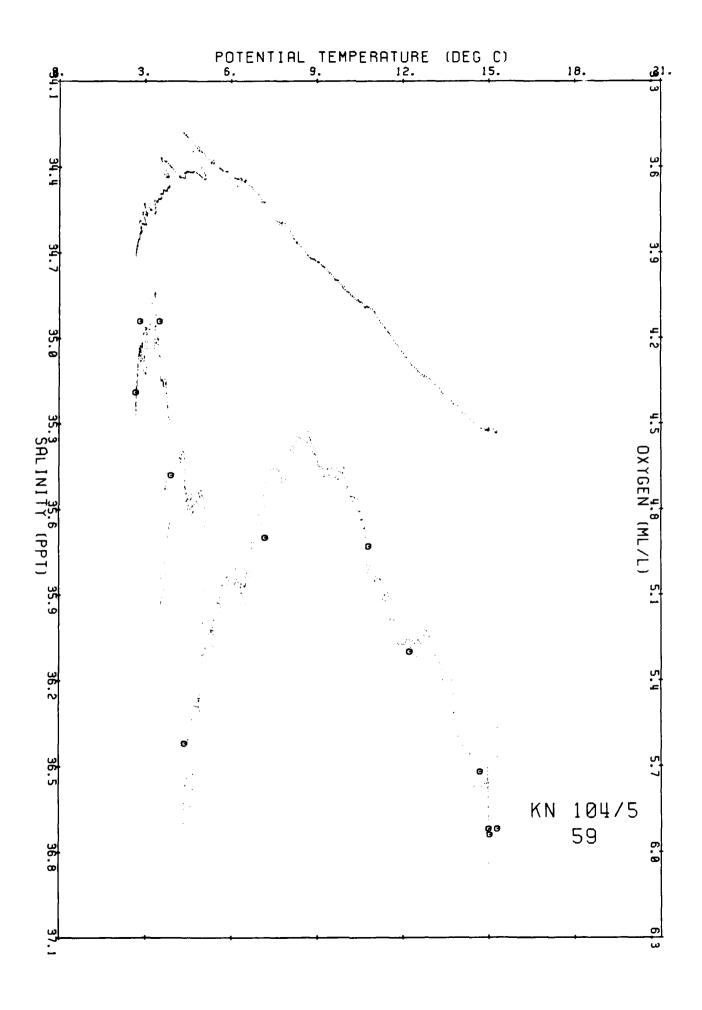
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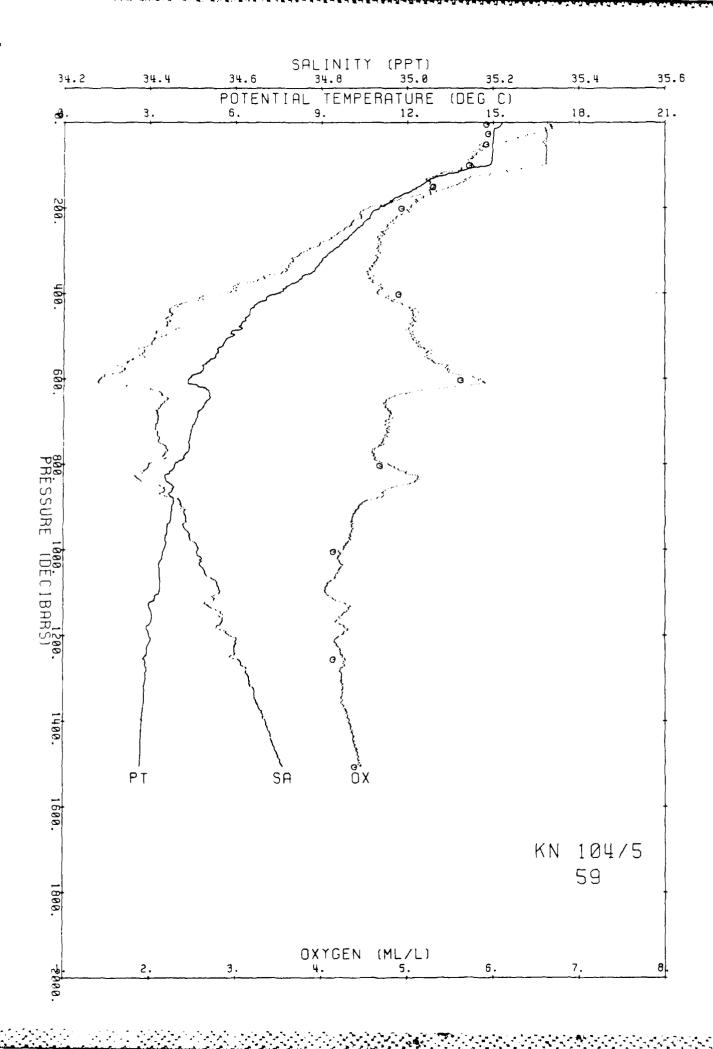
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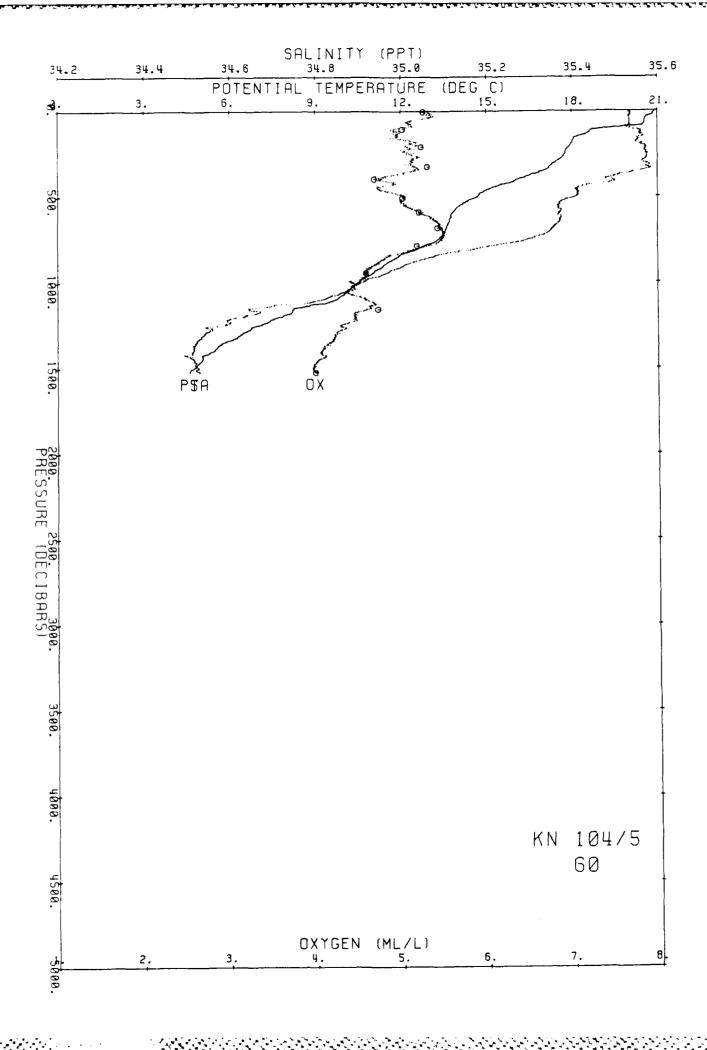
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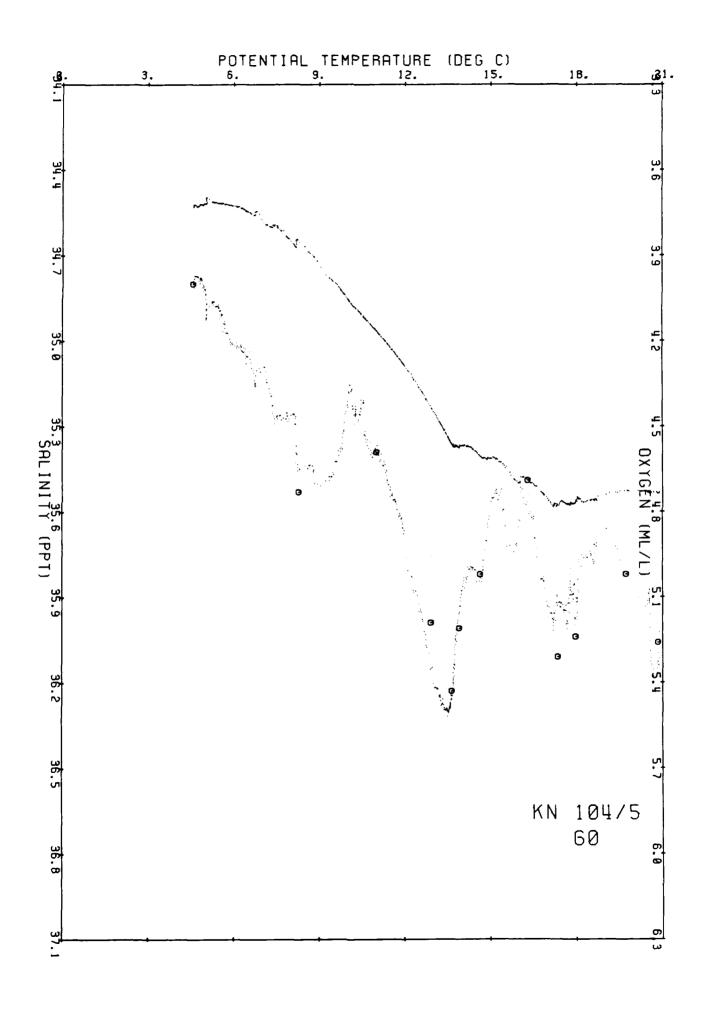
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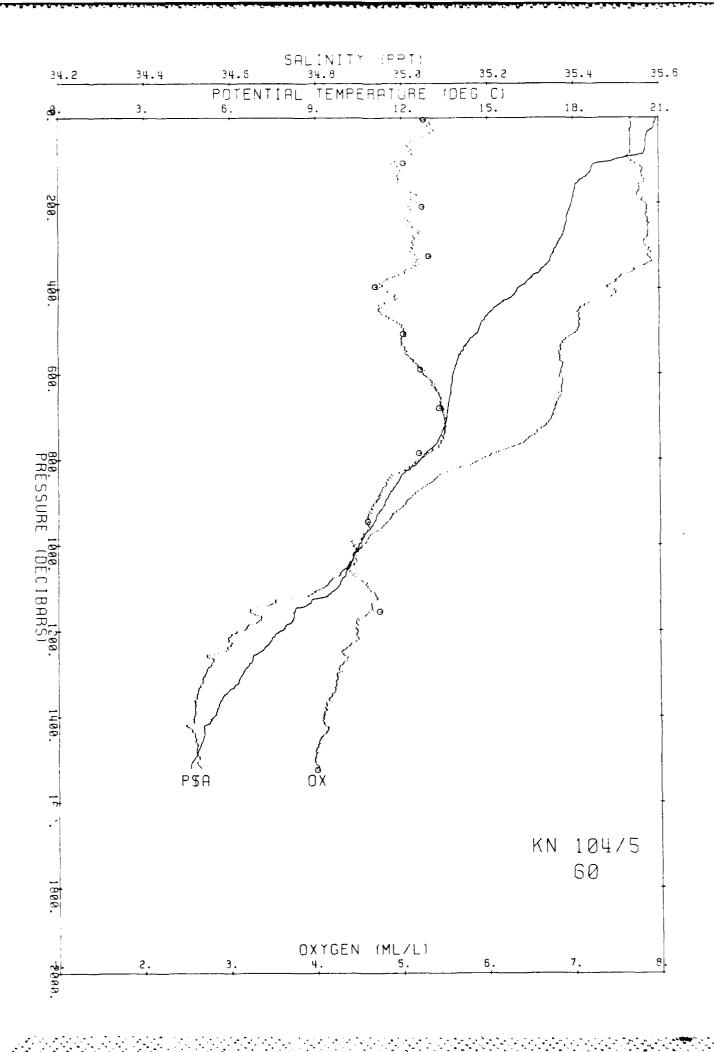
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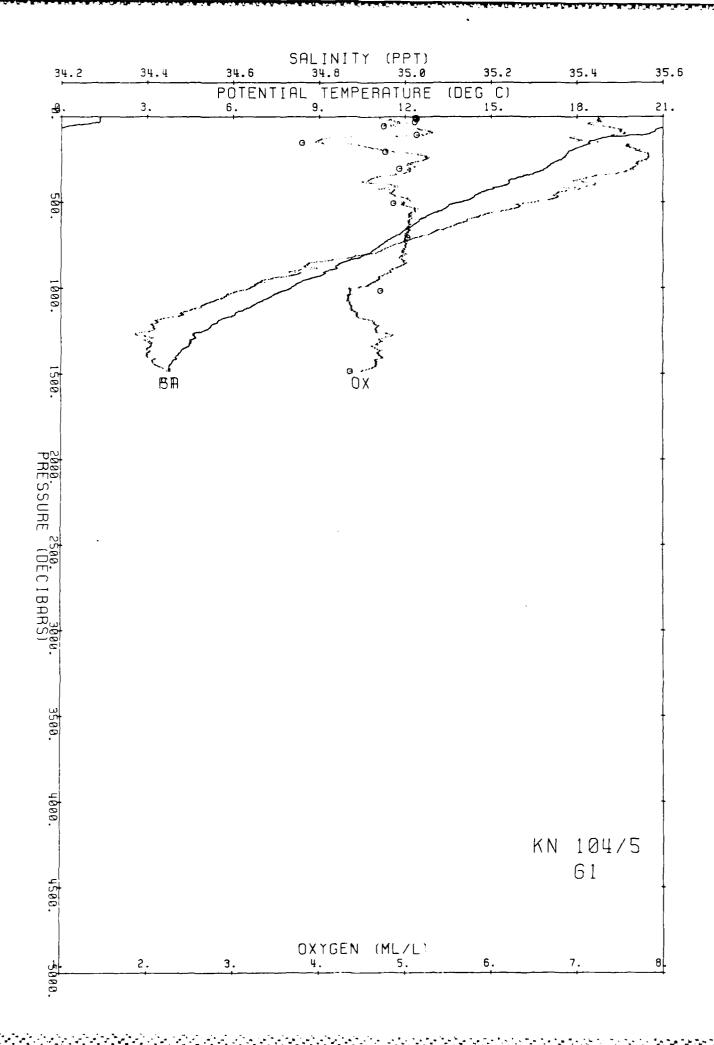


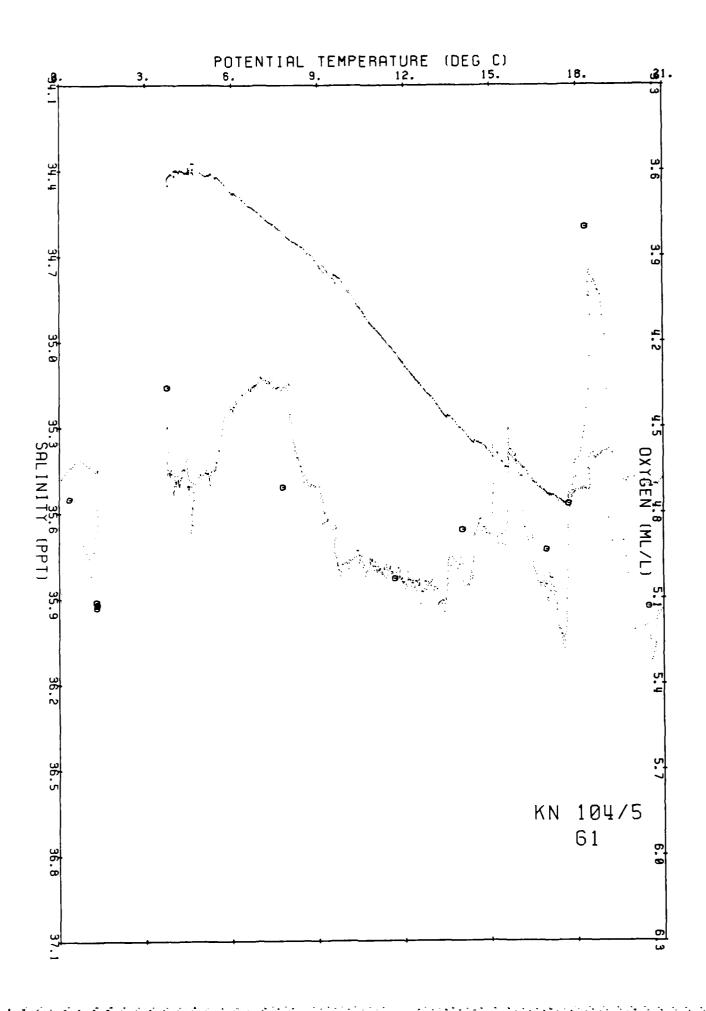


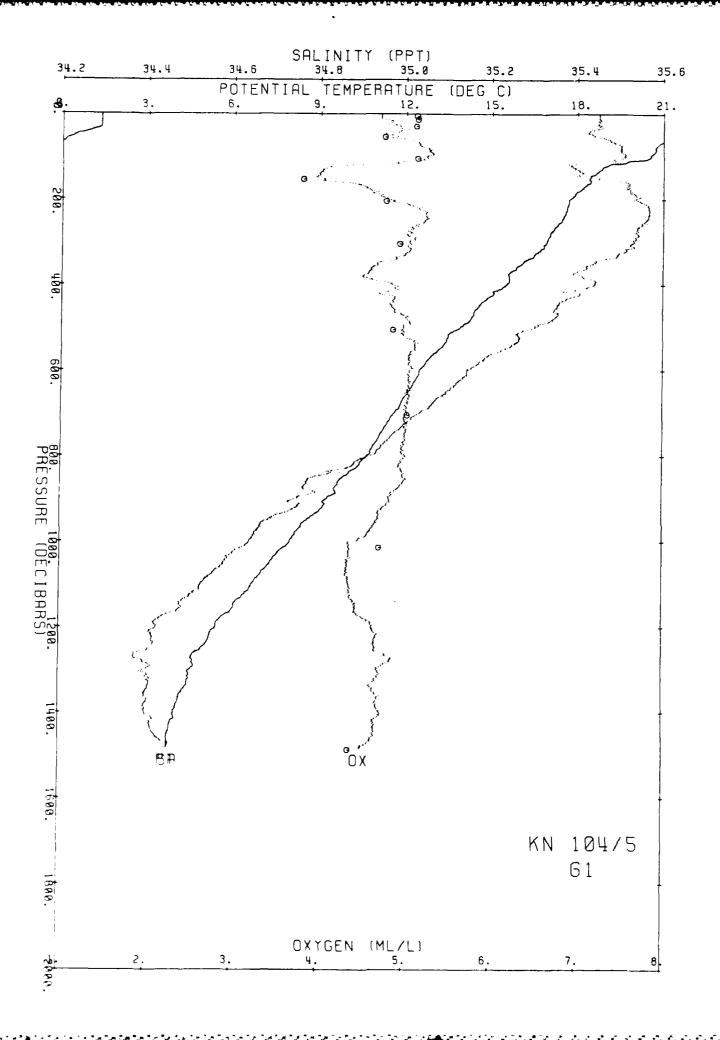
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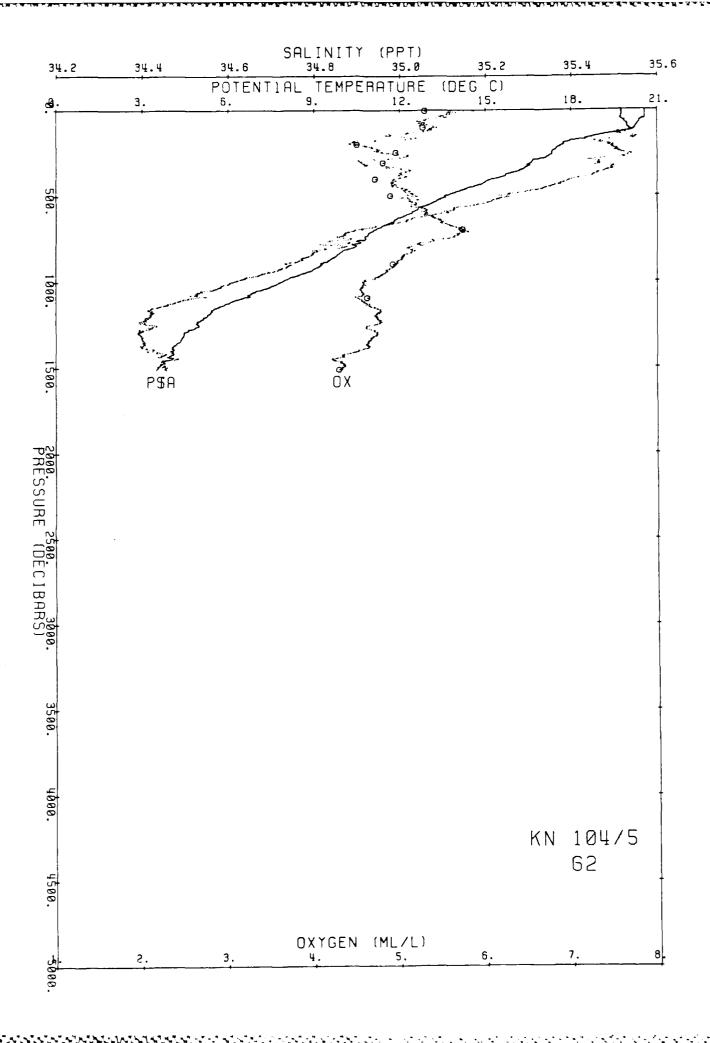


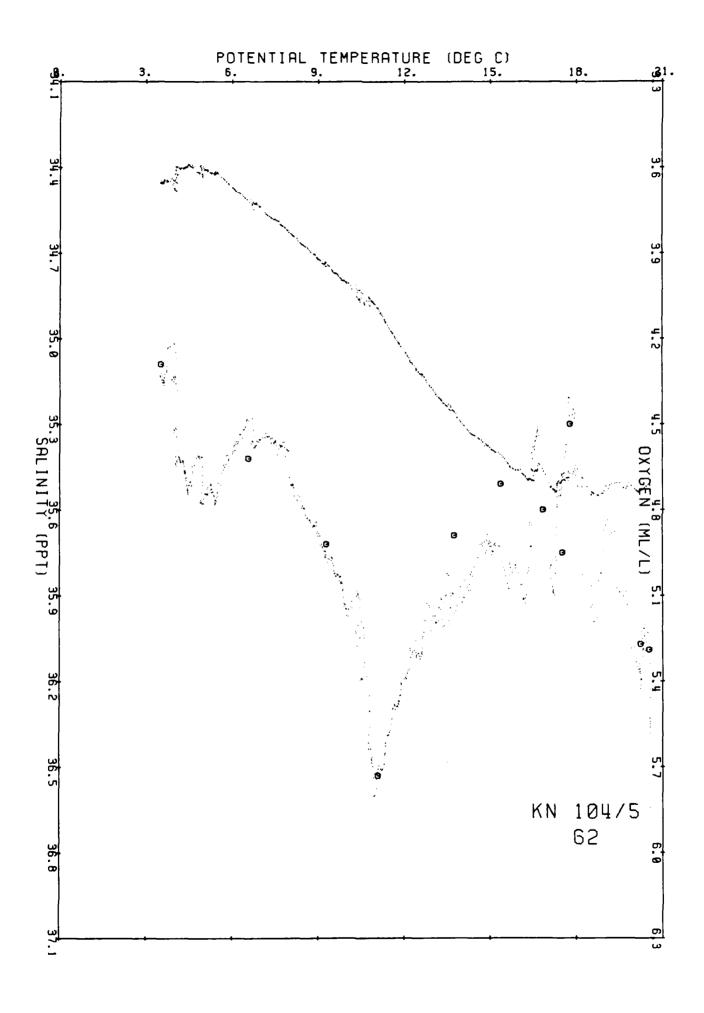


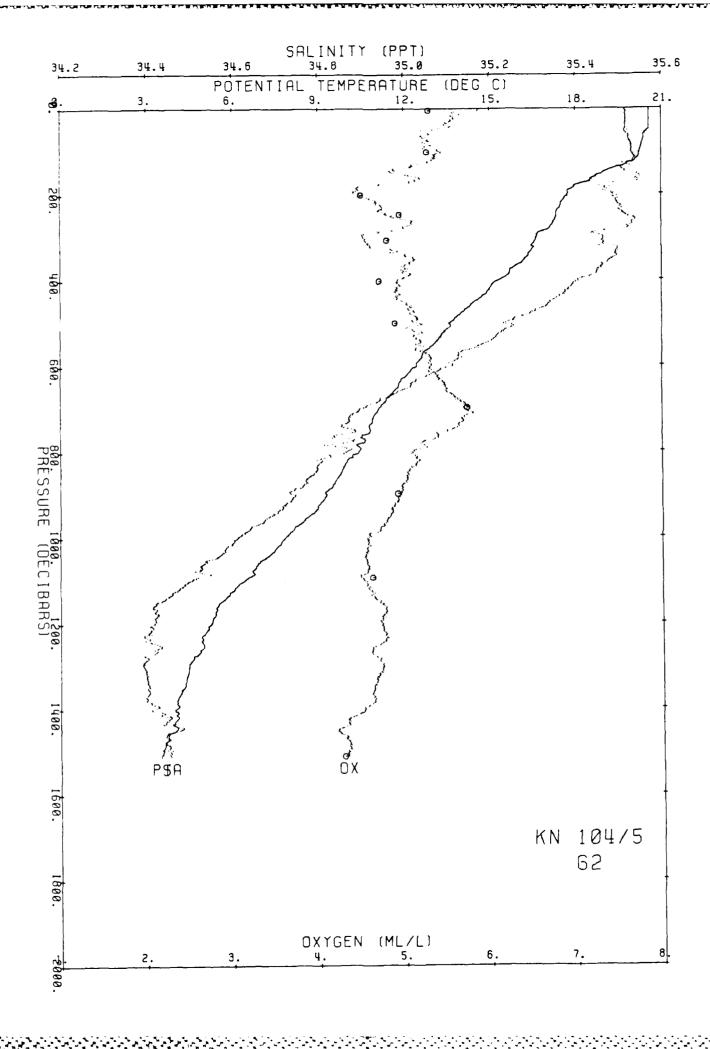
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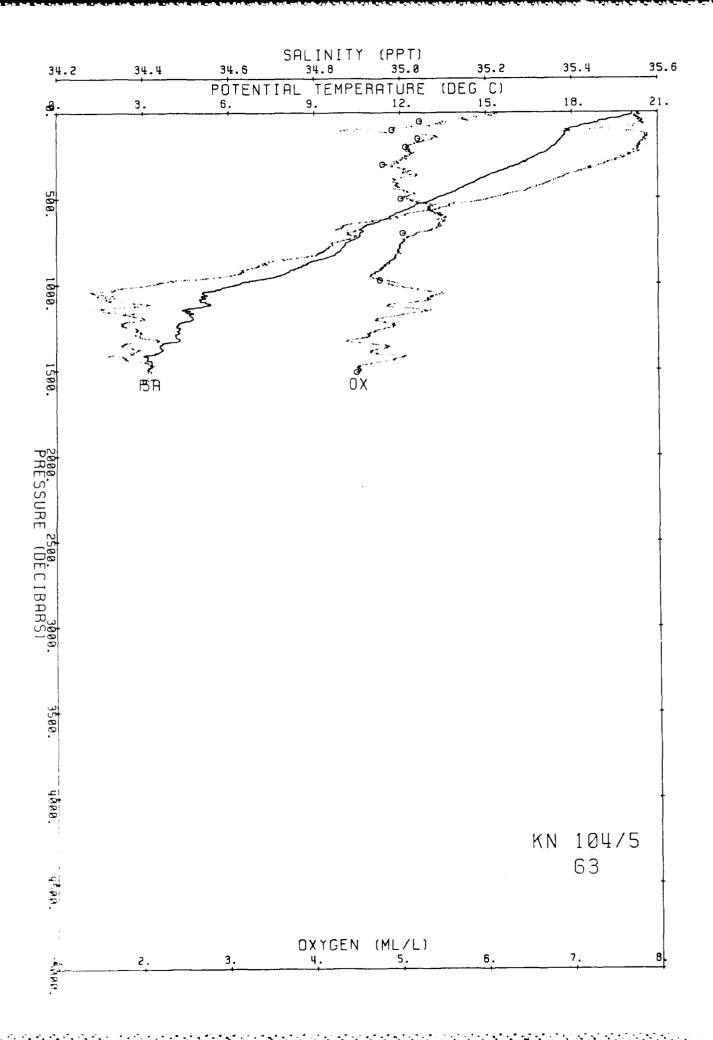
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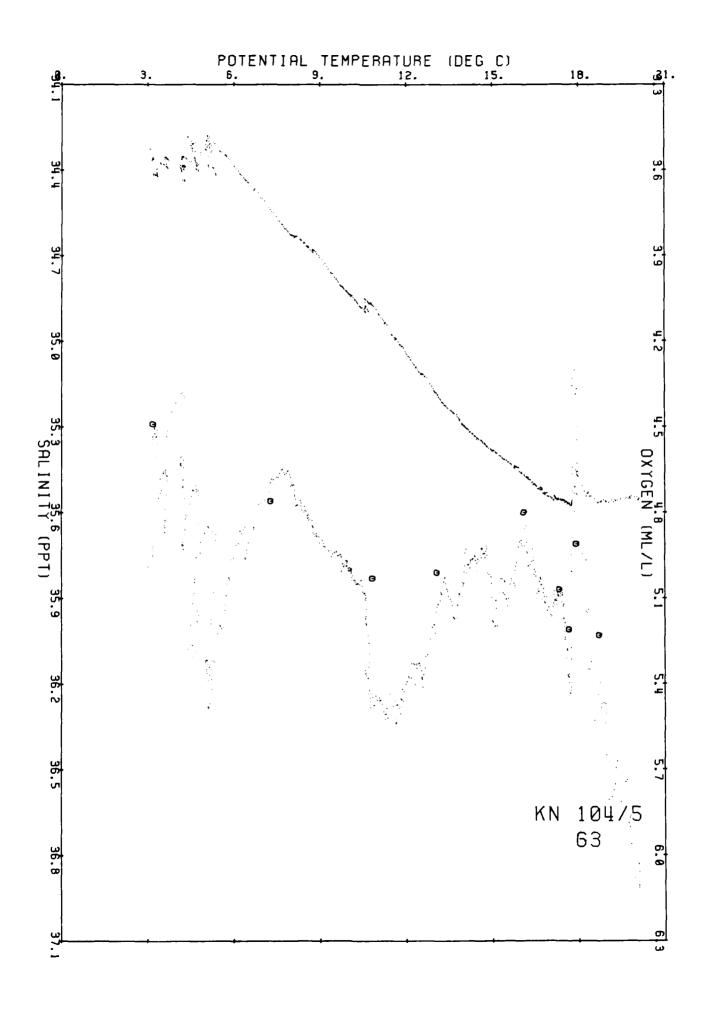
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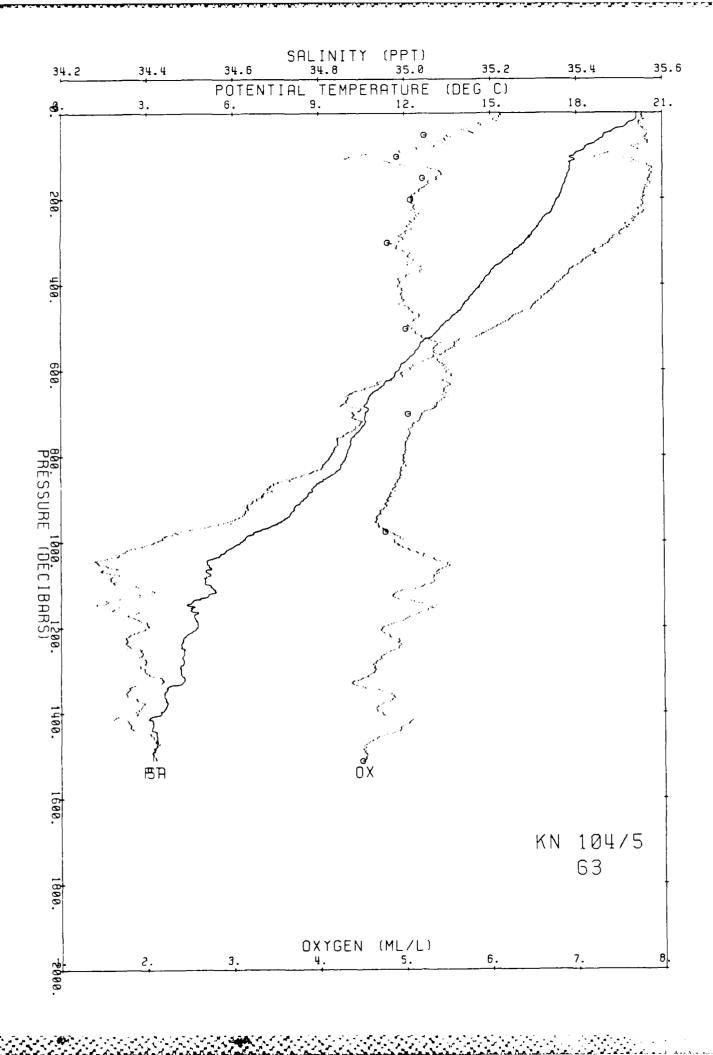
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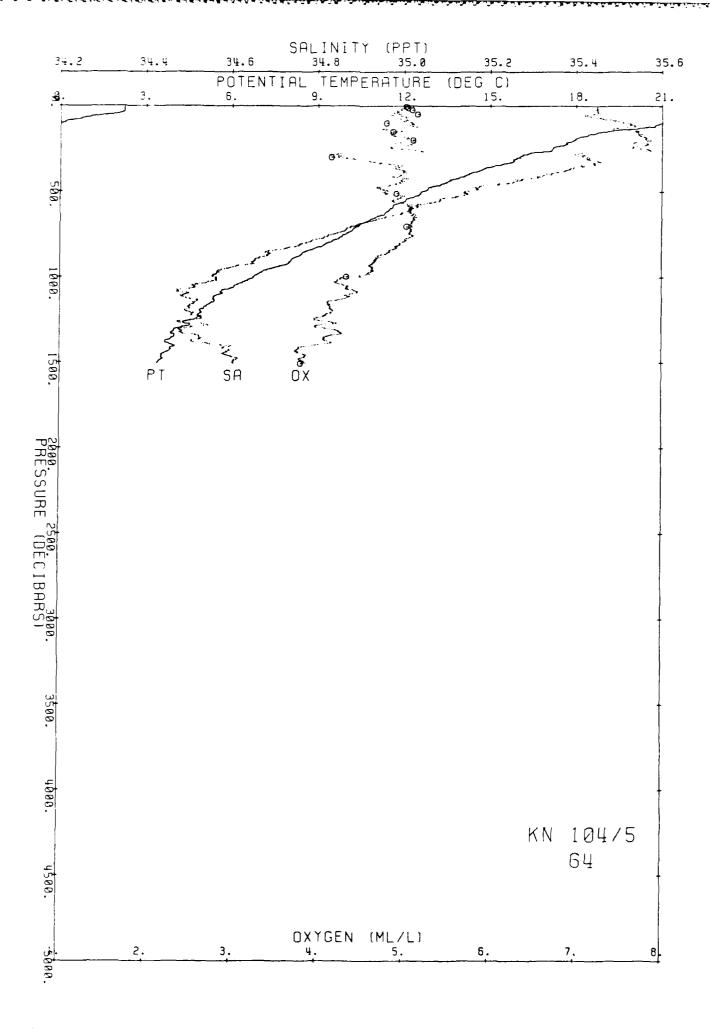
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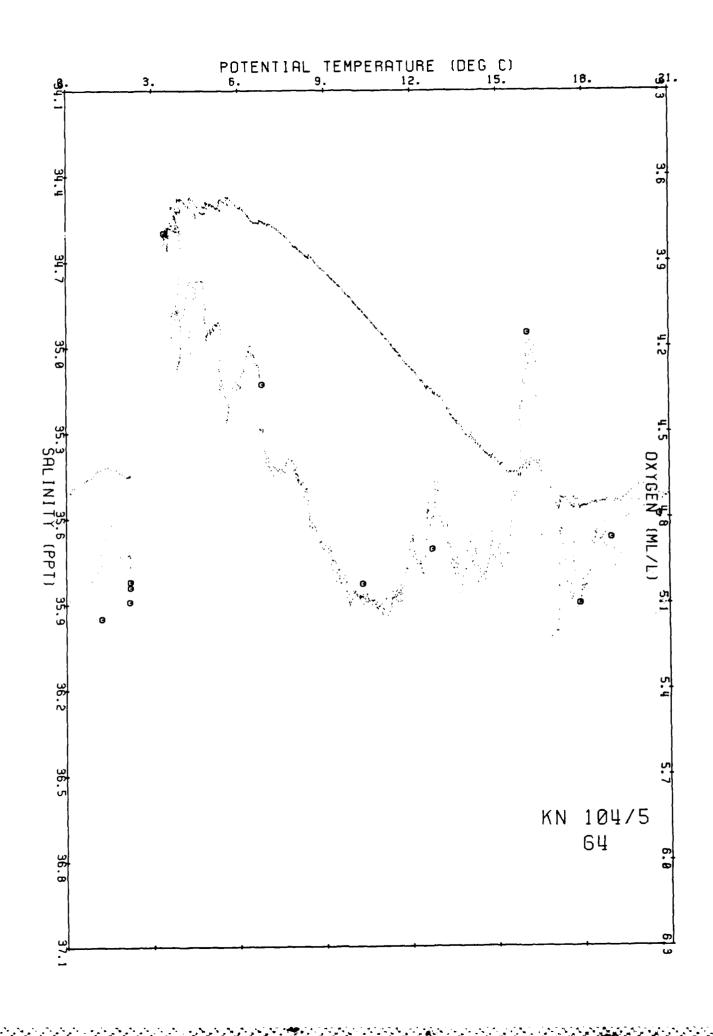
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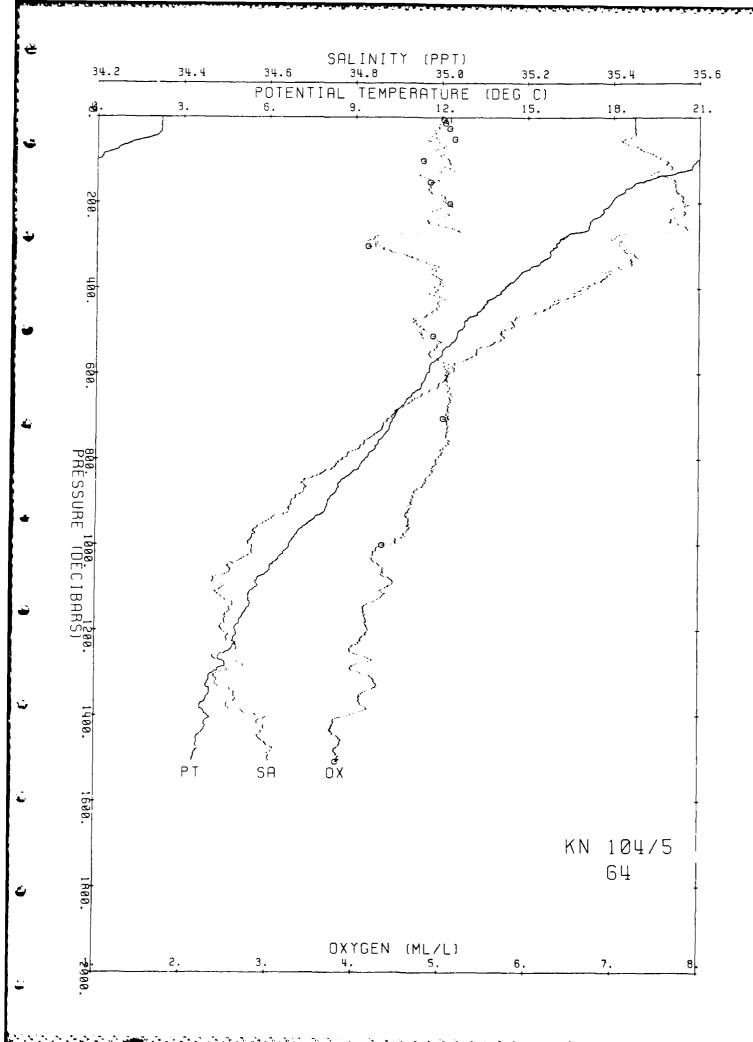
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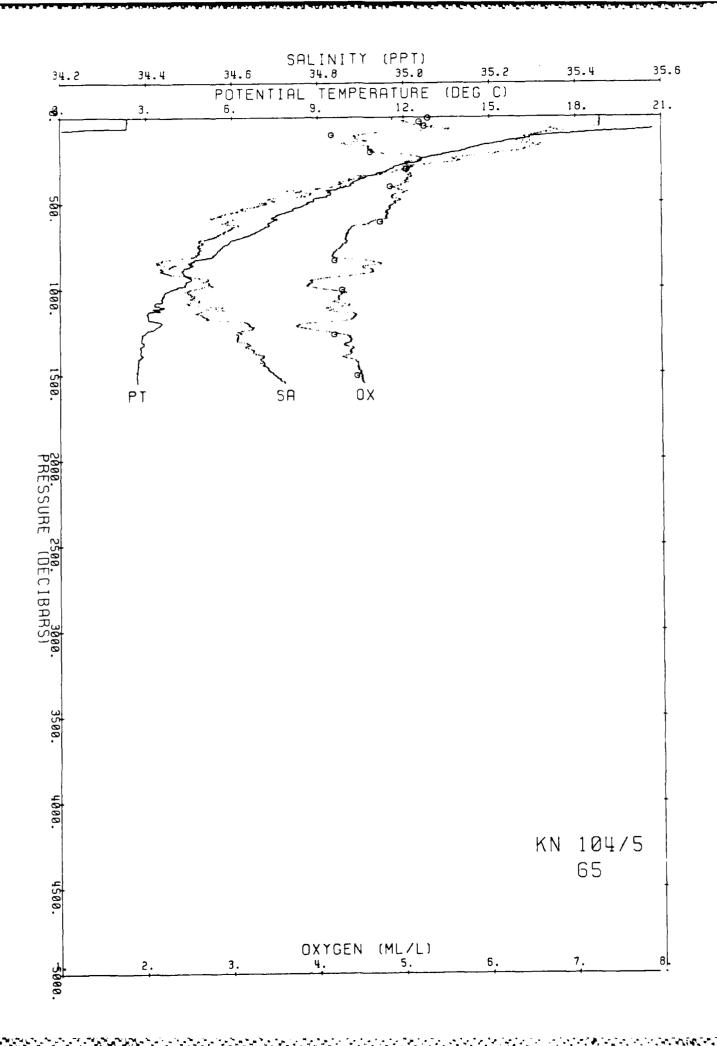
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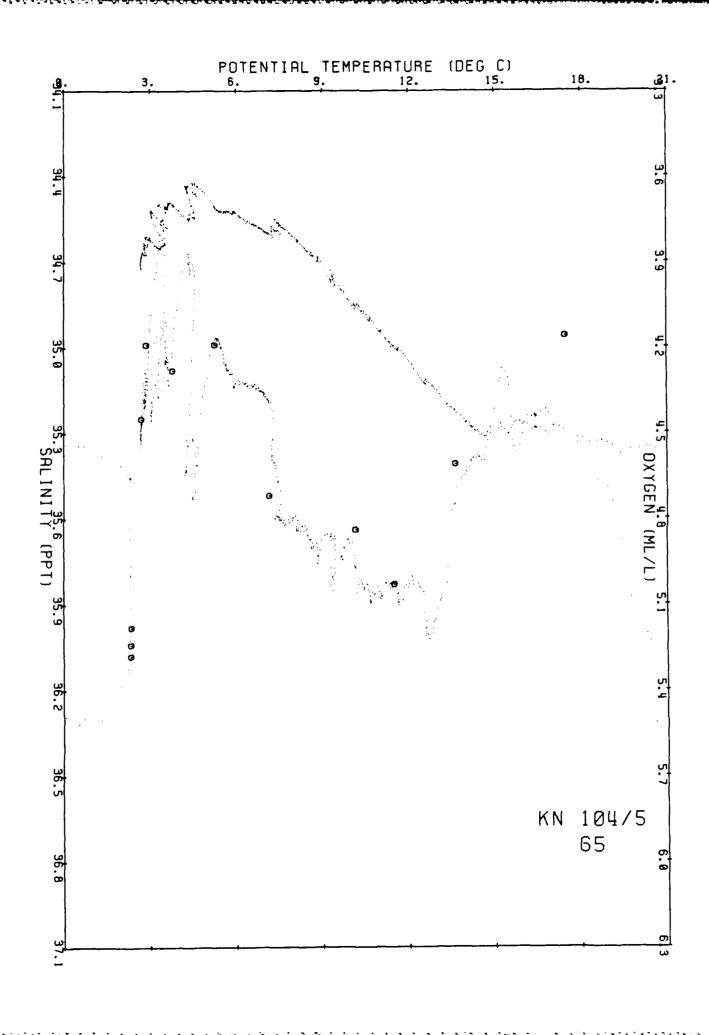
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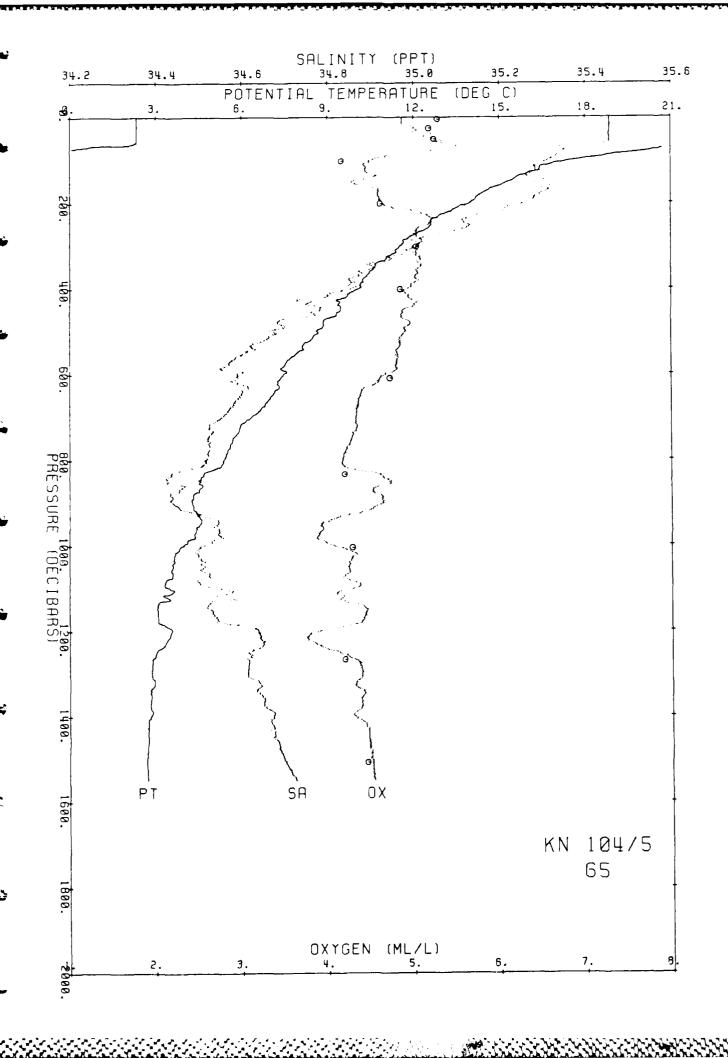












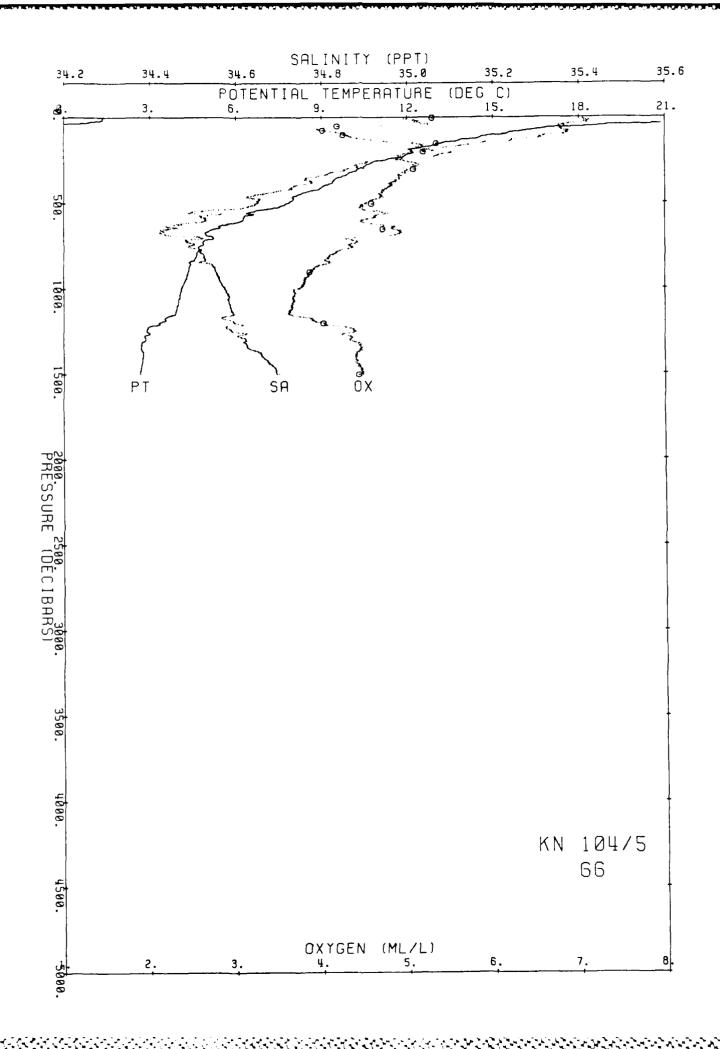
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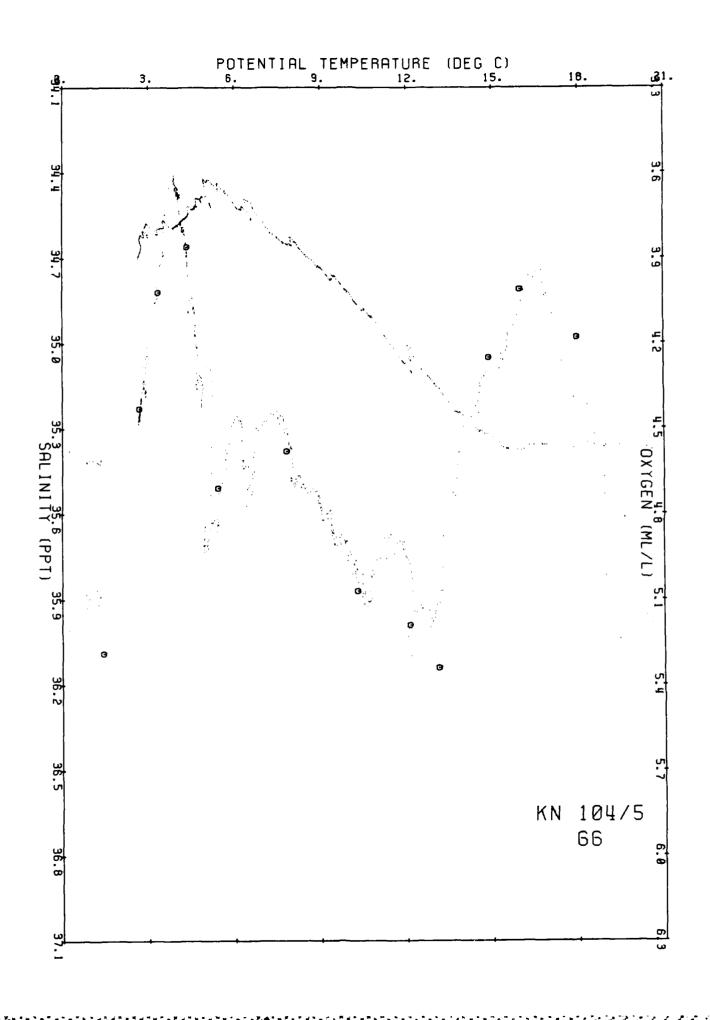
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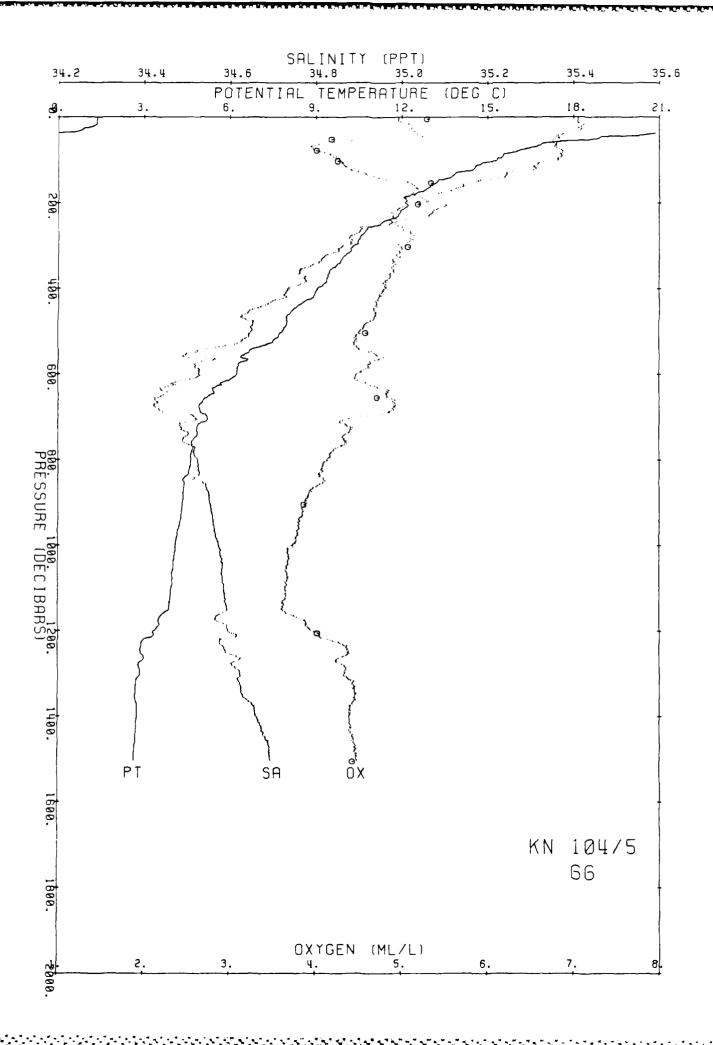
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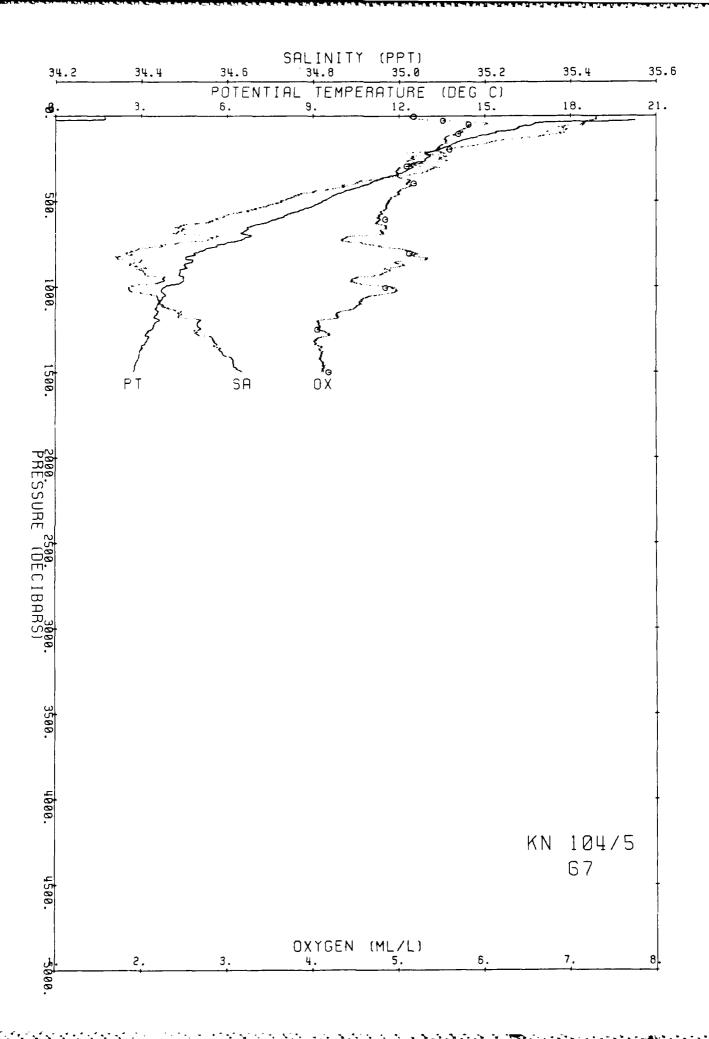


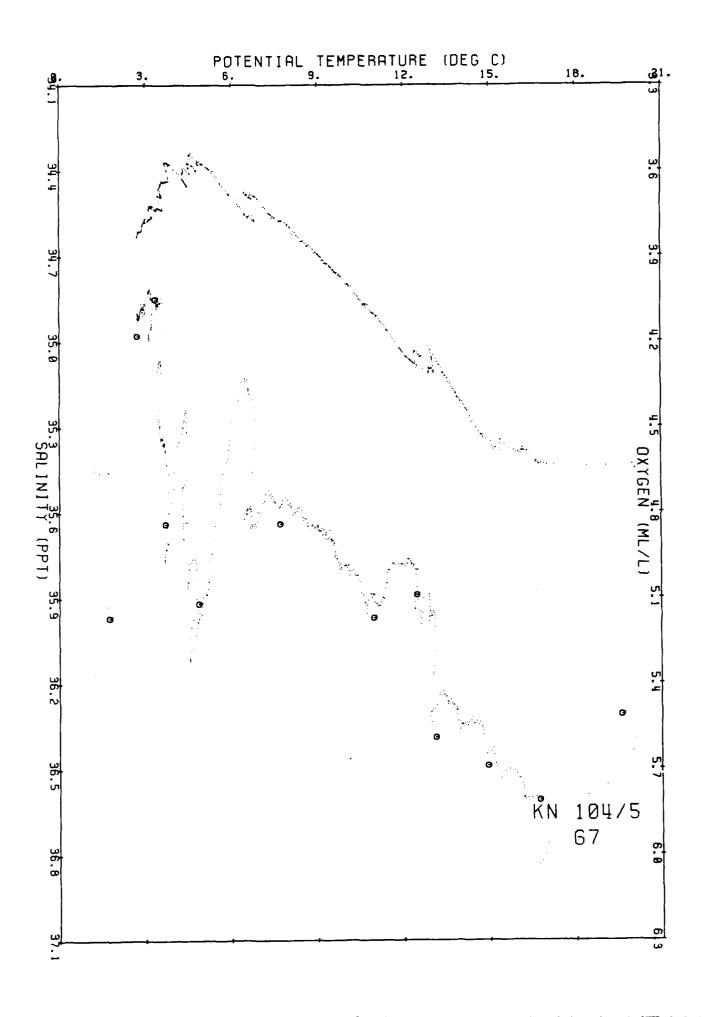


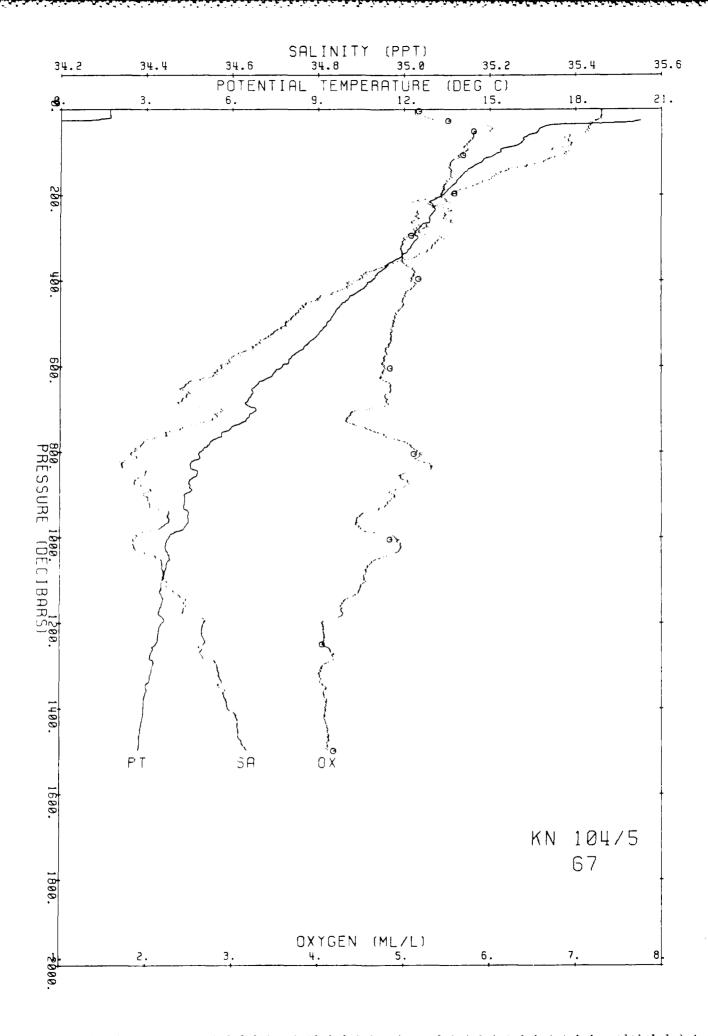
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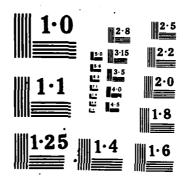
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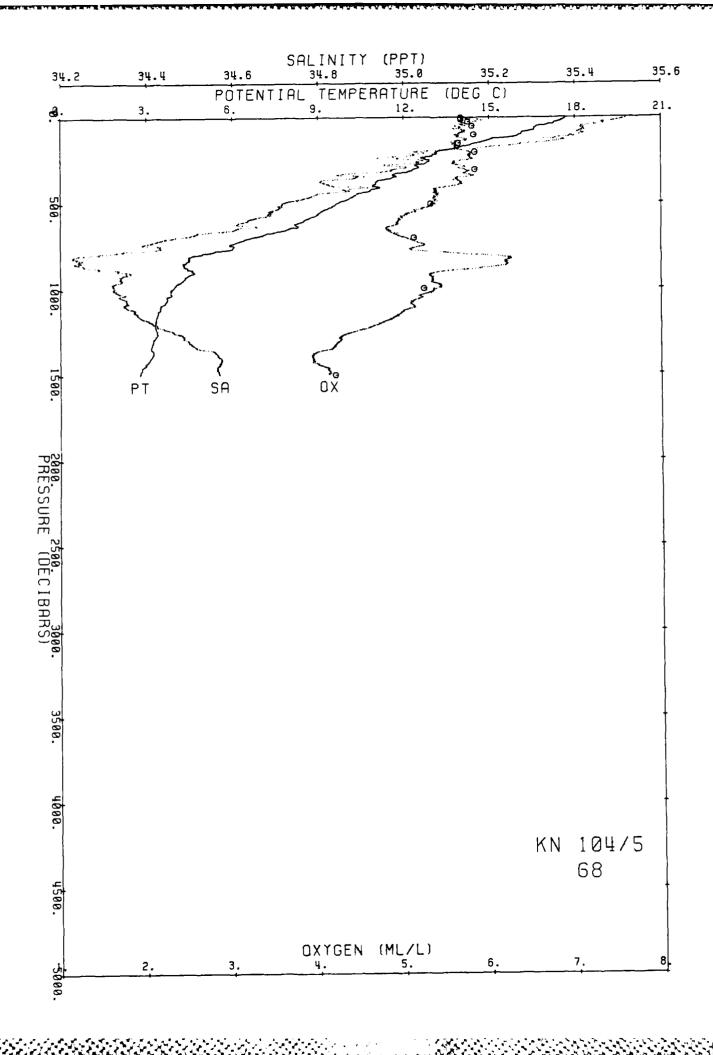
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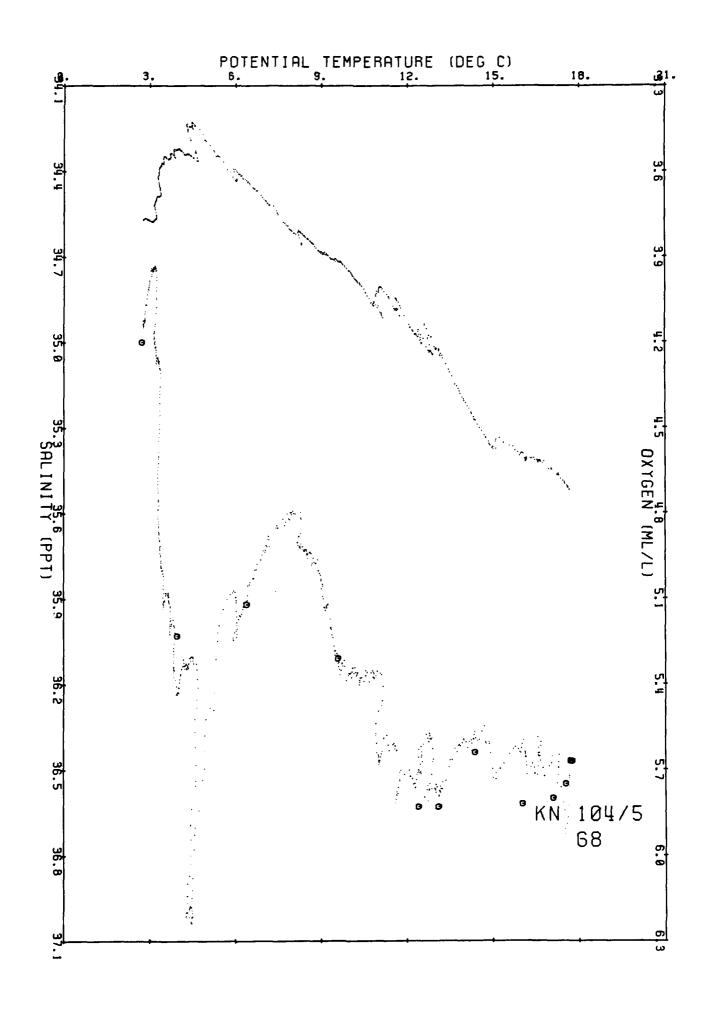
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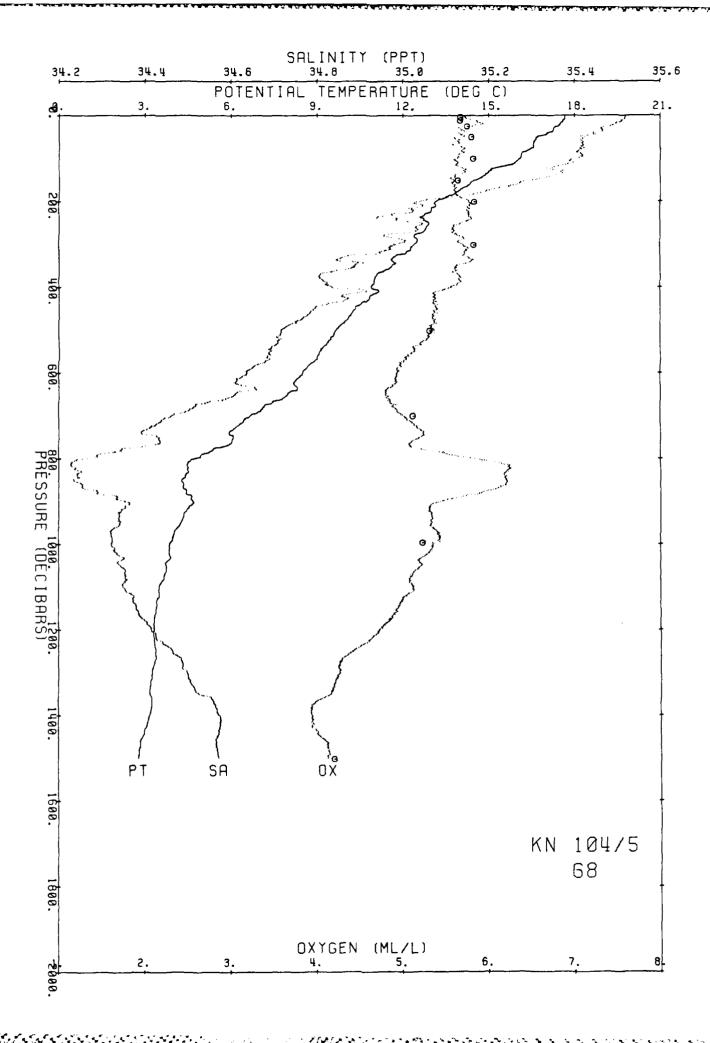


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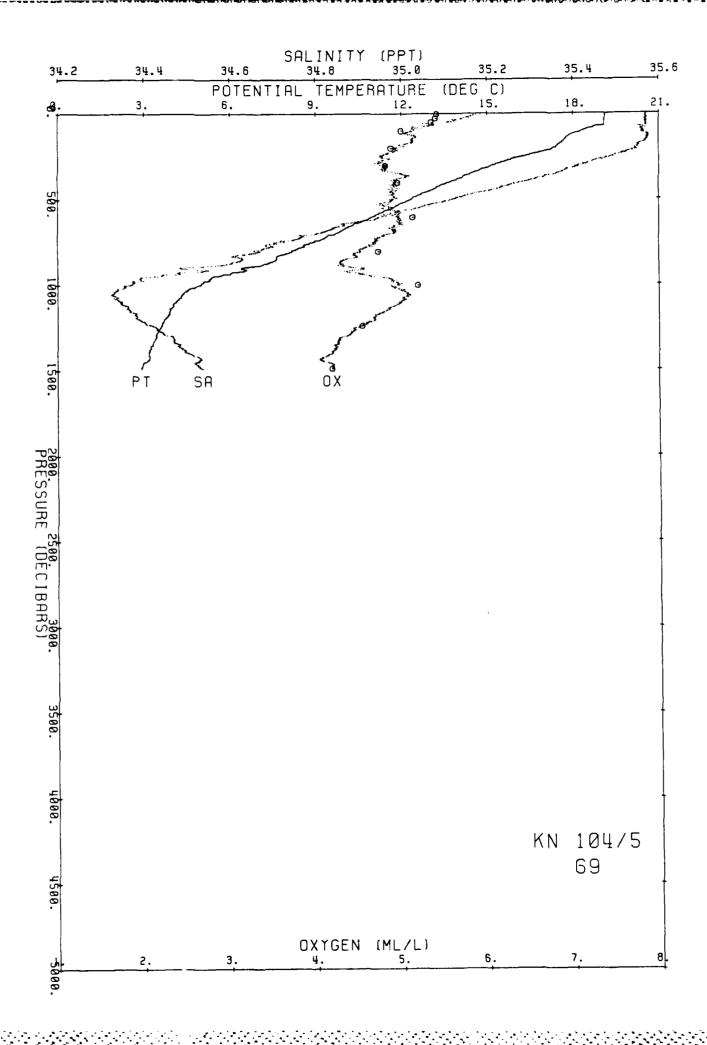
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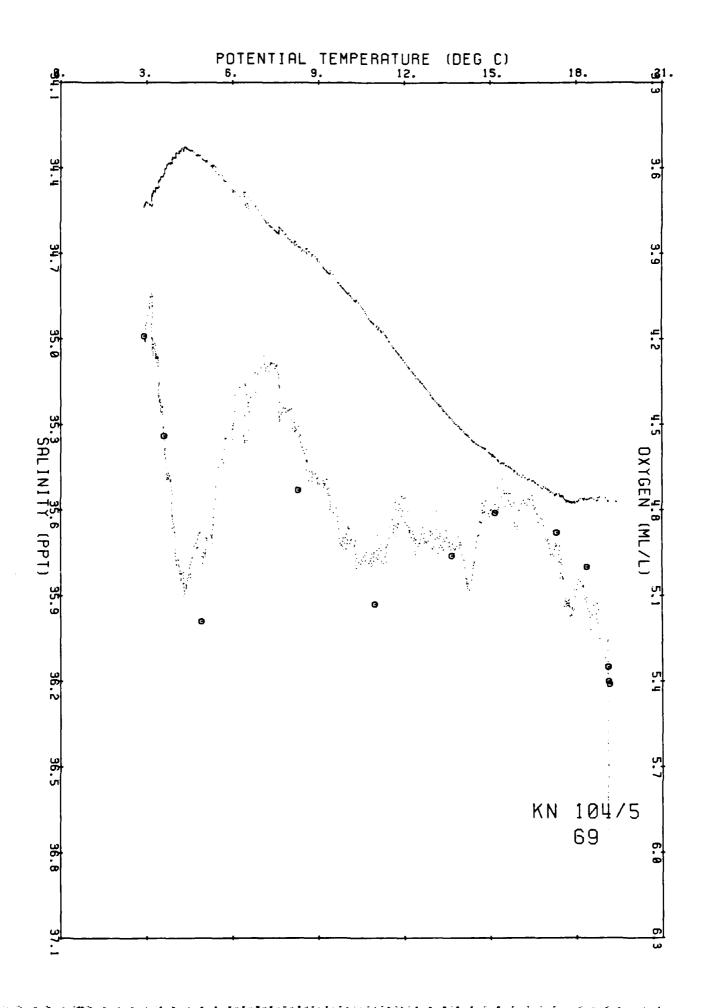


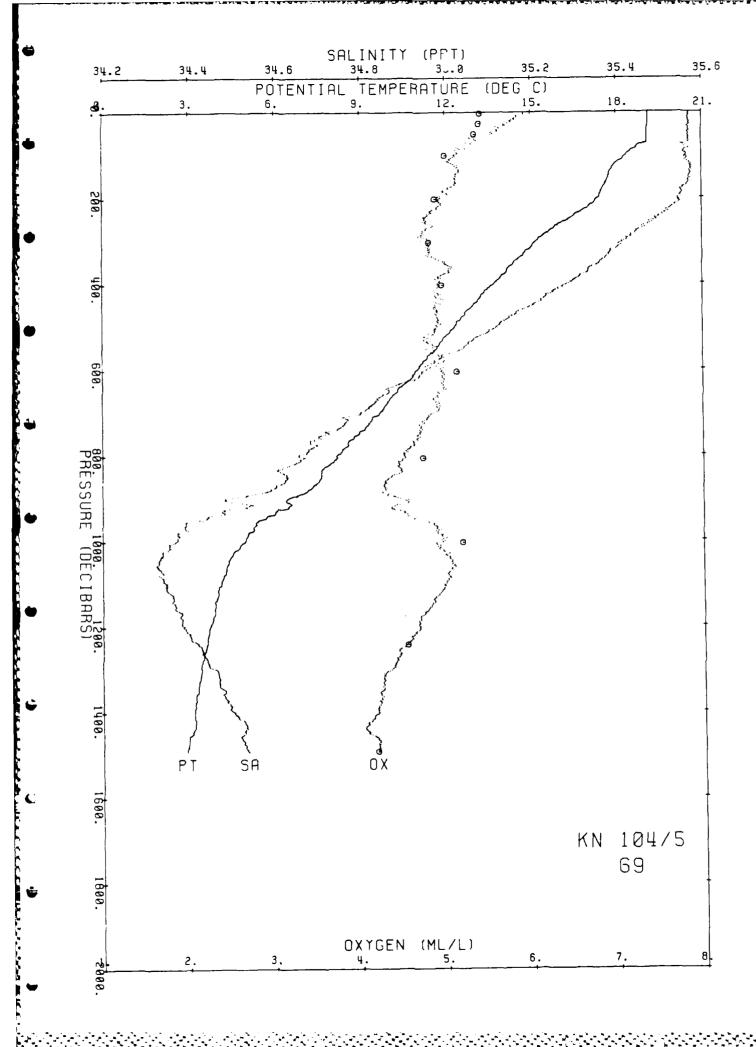


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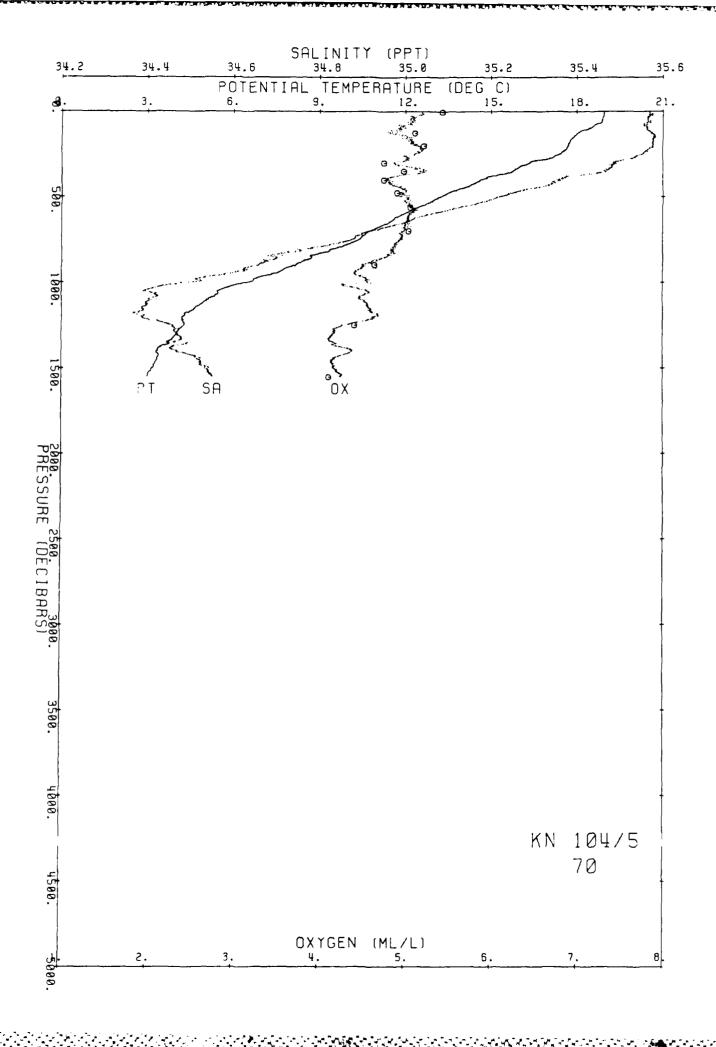


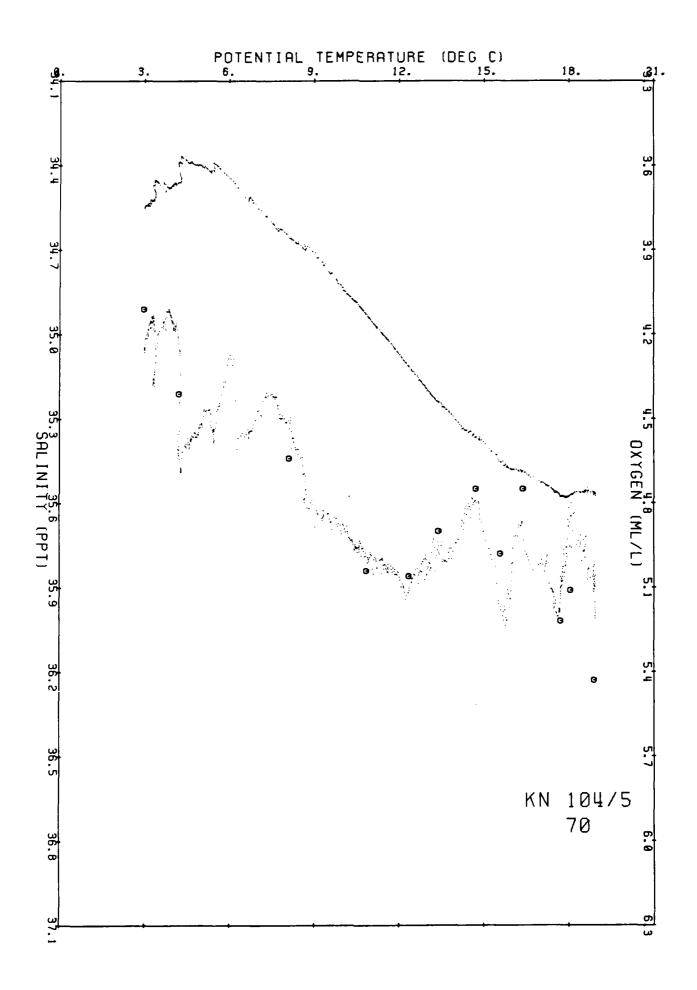


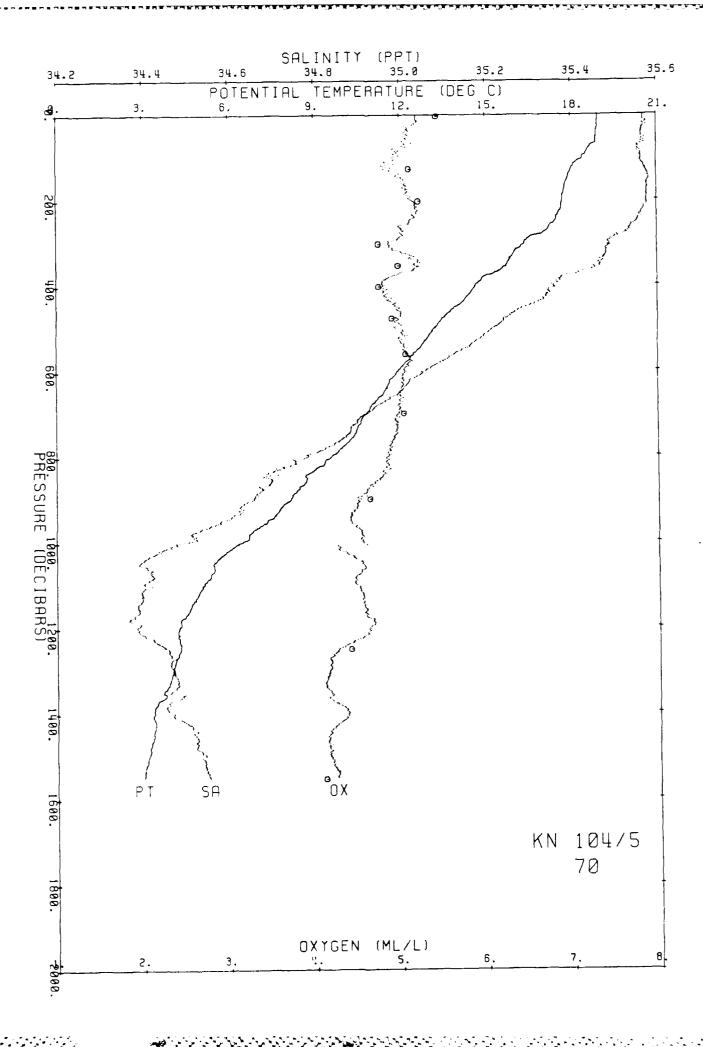


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PR DF 3.7 127 18 072 18:050 35 574 5:11 203 17 740 17 705 35.579 5.22 3.7 0.29 1.9 0.01 0.40 25.789 30.094 34.305 38.423 42.453 303 16.422 16.373 35.494 4.75 5.0 0.50 4.8 0.01 0.38 26.042 30.371 34.604 38.744 42.794 353 15 644 15 588 35,453 4,98 5.2 0.52 5 0 0.34 26.191 30.533 34.780 38.933 42.996 350.1 402 14.778 14.717 35.371 4.75 0.66 4.3 0.37 26.321 30.680 34.942 39.111 43.189 6.4 477 13 477 13 409 35,248 4,90 4.3 0.77 5.8 0.31 26.503 30.887 35.174 39.366 43.467 472.4 560 12 430 12.354 35.123 5.06 7.2 0.87 8.3 0.38 26.617 31.022 35.330 39.543 43.663 699 10.934 10.846 34.936 5.04 8.7 1.10 13.3 0.33 26.754 31.191 35.530 39.773 43.923 692.2 899 8.218 8.122 34.656 4.64 13.9 1.68 16.0 0.32 26.986 31.485 35.883 40.184 44.389 889.7 1250 4.336 4.236 34.452 4.41 33.9 2.40 41.1 0.32 27.326 31.921 36.413 40.804 45.096 1236.9 1554 3.096 2.982 34.554 4.11 21.6 2.55 11.1 0.32 27.531 32.158 36.682 41.104 45.425 1536.0







おうかんかん 日本をおけられる できたいにない かし しょうかんじゅう こくさんきゅう

PR	TE	PT	5A	οx	os	so	S1	S 2	S 3	S4.	AN	нz	ВV	DE
2	18 981	18 881	35.581	4.5	85 9	25 497	29.783	33 975	38 075	42 087	247 5	0 00	0 00	0 0
10	18 879	18 877	35 579	4 6						42 087		. 02	4.2	10 0
20	18.882	18 878	35.580	4.5	87.6	25.497	29 783	33.975	38 075	42 087	248 3	.05	. 38	19 9
30	18 978	18 873	35.583	4.8	91 2	25.501	29 787	33 979	38.079	42 091	248 3	07	1 09	29 9
40	19 386	18.879	35.581	4.9	93.0	25.497	29.783	33.975	38 076	42 088	249 0	10	1 01	39 9
50	18 887	18 878	35.580	49	93 1	25.497	29 783	33.975	38 075	42 087	249 4	12	. 37	49 8
50	18 887	18.877	35.530	5.0	94 7	25.497	29 783	33.975	38 076	42 088	249.8	.15	. 32	59 8
70	18.885	18.873	35.579	5.0	94 4	25 490	29.784	33.976	38 076	42 088	250 1	17	. 32	69 8
80	18.882	18 868	35.578	5.0	95.2	25 498	29.784	33 976	38.077	42 089	250 5	20	. 38	79.7
90	18 985	18 869	35 578	5 0	95 7	25 498	29.784	33.976	38 076	42 089	250 9	. 22	. 37	89 7
100	18.885	19.868	35.578	5.0	95 4	25.498	29 784	33 976	38.077	42 089	251.2	25	. 38	99 7
120	18 886	18.865	35.576	5 1	96 9	25 497	29.784	33 976	38.076	42 089	252 1	30	- 34	119 6
140	18.424	18 400	35.561	5.1	95 7	25 603	29.897	34.097	38.204	42 224	242 7	35	4 10	139 5
		18.136		5.0		-				42.310		40	3.34	159 5
		17 890		5 0						42 393		. 44	3 26	179 4
		17 695		5 1						42 451		49	2.71	199 3
-		17 458		5 0						42 507		. 5 3	2 54	219 2
		17.050		4 9						42 620		58	3 71	239 1
		16.648		4 9					-	42 724		. 62	3 53	259.0
		16.234		4.9						42 827		66	3.46	278.9
		15.803		4.8						42 933		. 70	3.52	298 8
		15.491		4.8						43 008		74	2.92	318.7
		15.271		4 8						43 061		. 78	2.47	338.6
		15.006		4 0						43 123		. 8 2	2 66	358 5
		14.713		4.8						43 192		85	2.78	378 4
		14.426		5.0						43 254		89	2 6 3	798 3
		13 722		5 0						43 406		98	2 57	448.0
		13.110		5.2						43 526			2.22	497 7
		12.429		5.2						43 645		1 14	2.15	547 4
		11 787		5.1						43 754			2.02	597 1
		11.218		5.1						43 862			2.08	646 7
		10 581		5.1						43 956			1.79	696 4
800	9 584		34.782	5.0						44 053			1 99	746 0
900	8.324		34.667	4.9 4.6						44 151			1 89	795 6
1000	6 280		34.451						-	44 372		-	2.05	894.8
1100	5.420		34.451	4.8			31 781						2.26	993 9
1200	4.504		34.430	4.4			31.881				98.6 90.1			1092.9
1300	3.847		34.451	4.4			31.983				90.1			1290.9
1400	3.262		34.441	4.4			32.048				75.4		-	1389.8
1500	3 000		34.504	4.3			32.129				68.3	-		1488.6
1514	2.951		34 514	4.2			32.129				67 0			1502 4
* 3 7 4	4.731	2 a41	34 314	7.4	20 Ť	47.312	34.143	30.071	-T . 040	*3.464	6,0	2 20	1.79	1302 4

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54 18 868 18.858 35.575 5 37

104 18 869 18.851 35.576 5.38

204 17 742 17.707 35.576 5 21

305 16.035 15.986 35.464 4.65

404 14 442 14 382 35 347 4 78 605 11 751 11 672 35 021 5 24 806 9 650 9 856 34 793 4 84

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4.119 34.433 4.48 2.849 34.502 4 22

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0.41 25.500 29.786 33 978 38.079 42.091

0.44 25 501 29 787 33.979 38 080 42.092

0.48 25.498 29.784 33.977 38.077 42.090

0.49 25.501 29.787 33.980 38.081 42.093

0.26 26.109 30.444 34.684 38.831 42.887

0.23 26.375 30.740 35.009 39.183 43.267

0.25 26.668 31.088 35.410 39.636 43.770

0.28 26.866 31.332 35.698 39.968 44.143

0.29 27.093 31.642 36.089 40.436 44.686

0.30 27 323 31.921 36.416 40.811 45.106 1237 0

0.30 27.501 32.133 36.660 41.086 45.411 1500.1

 $0.01 \quad 0.28 \ 25.787 \ 30.092 \ 34.302 \ 38.421 \ 42.450$

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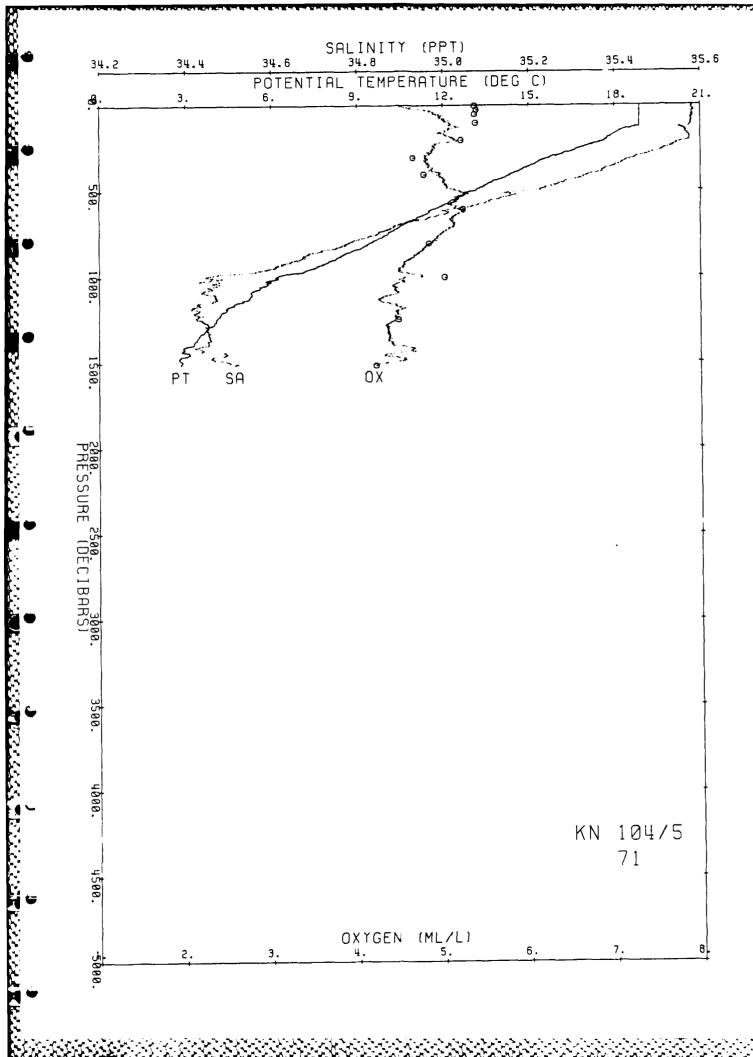
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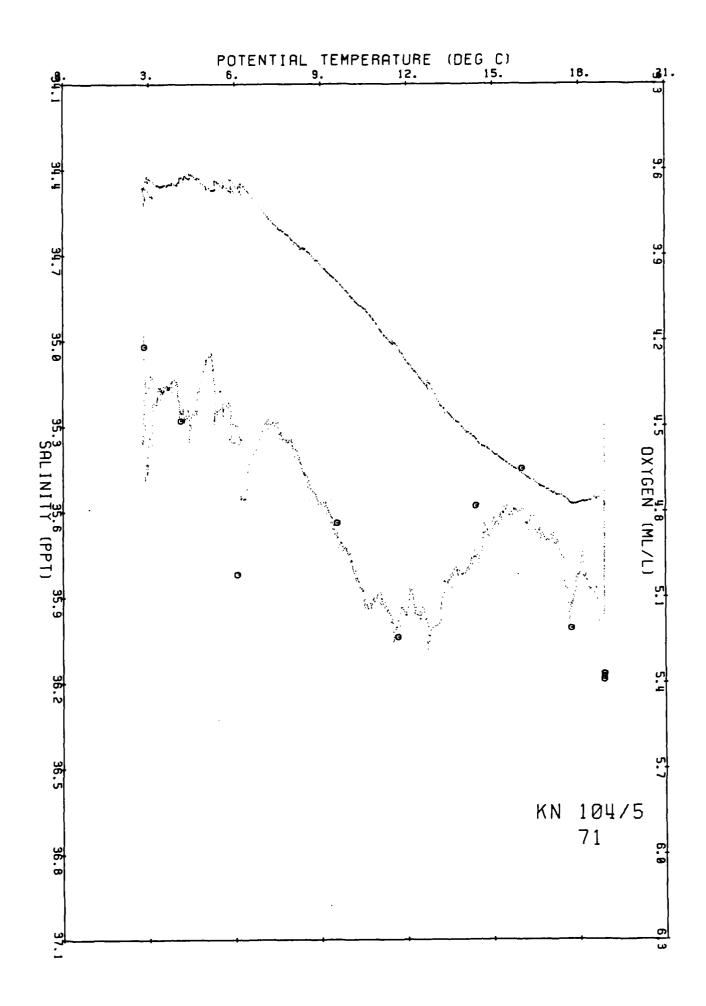
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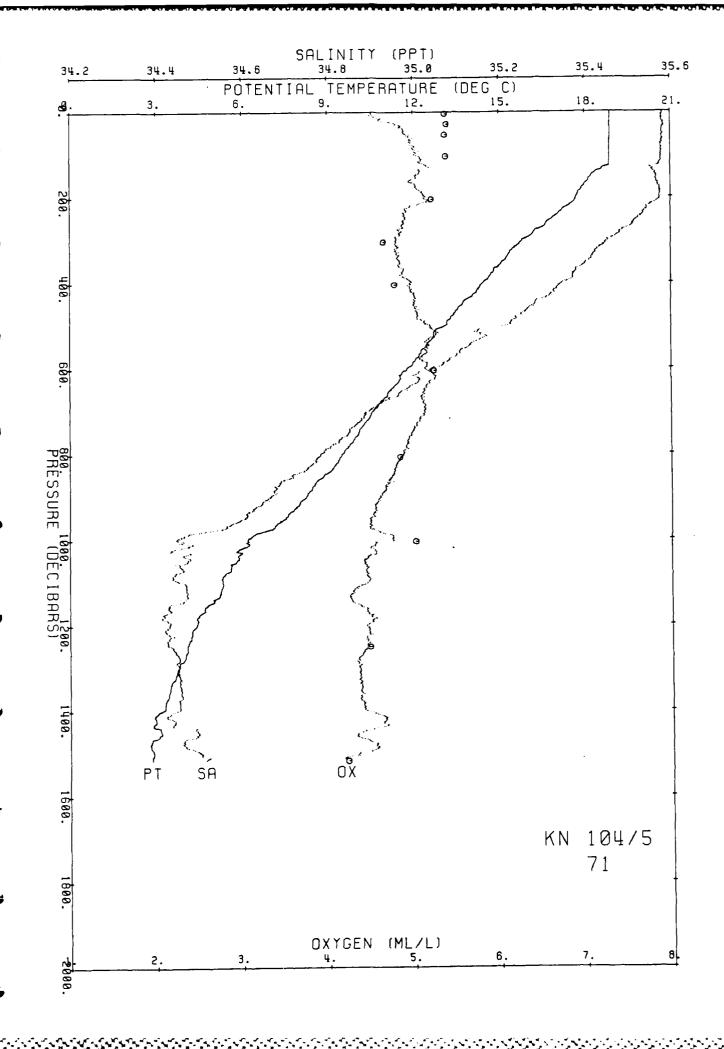
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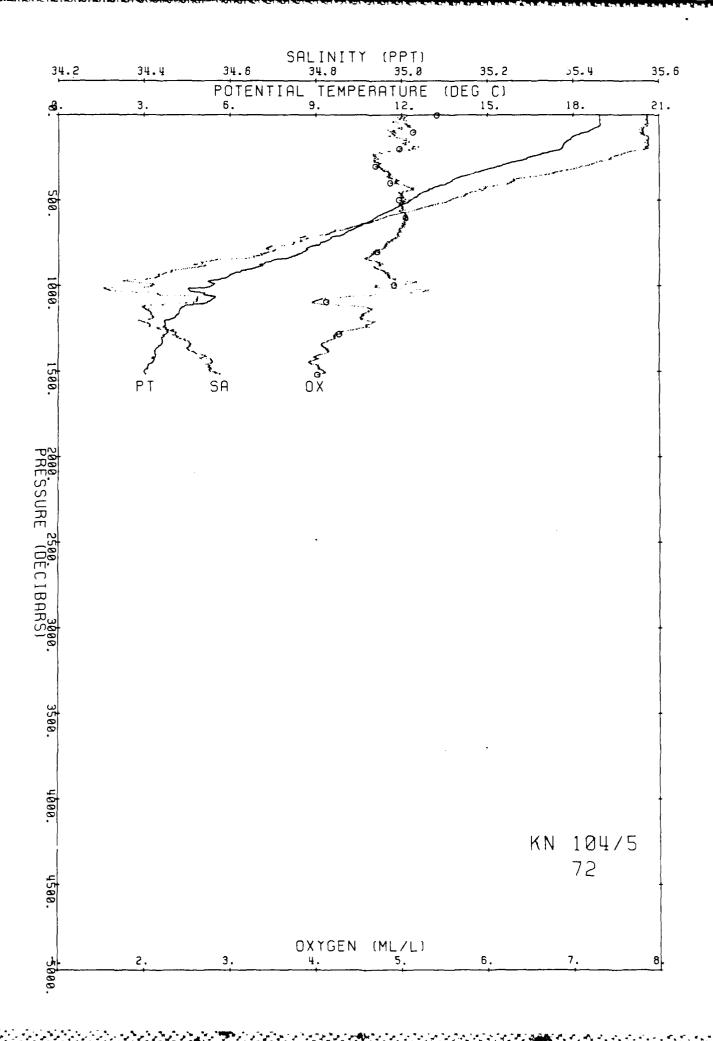
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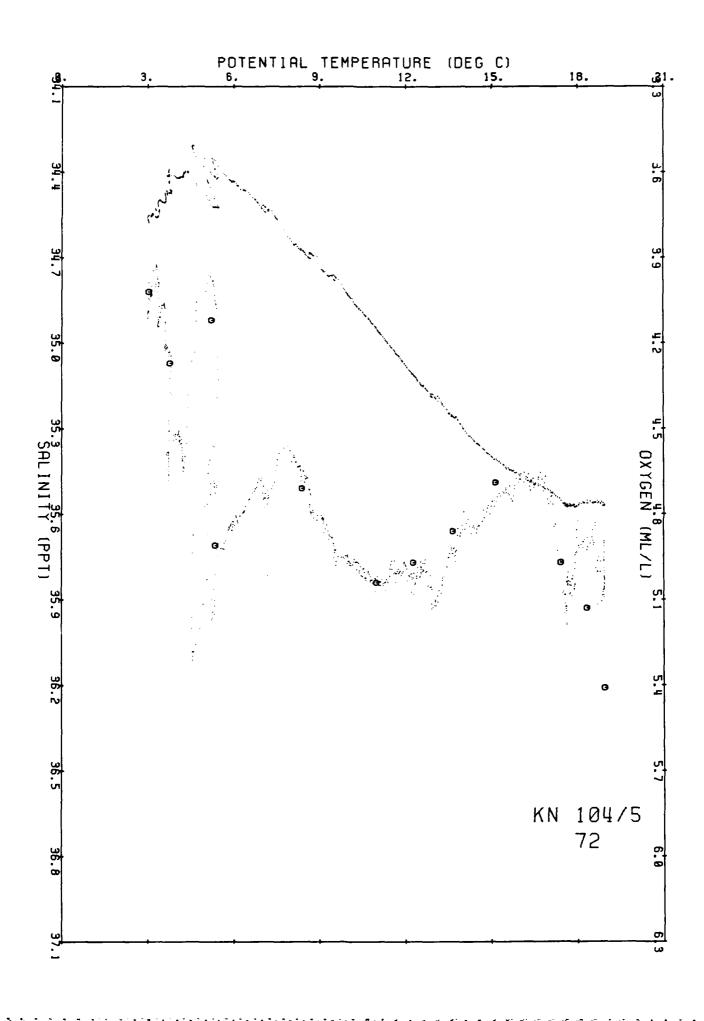


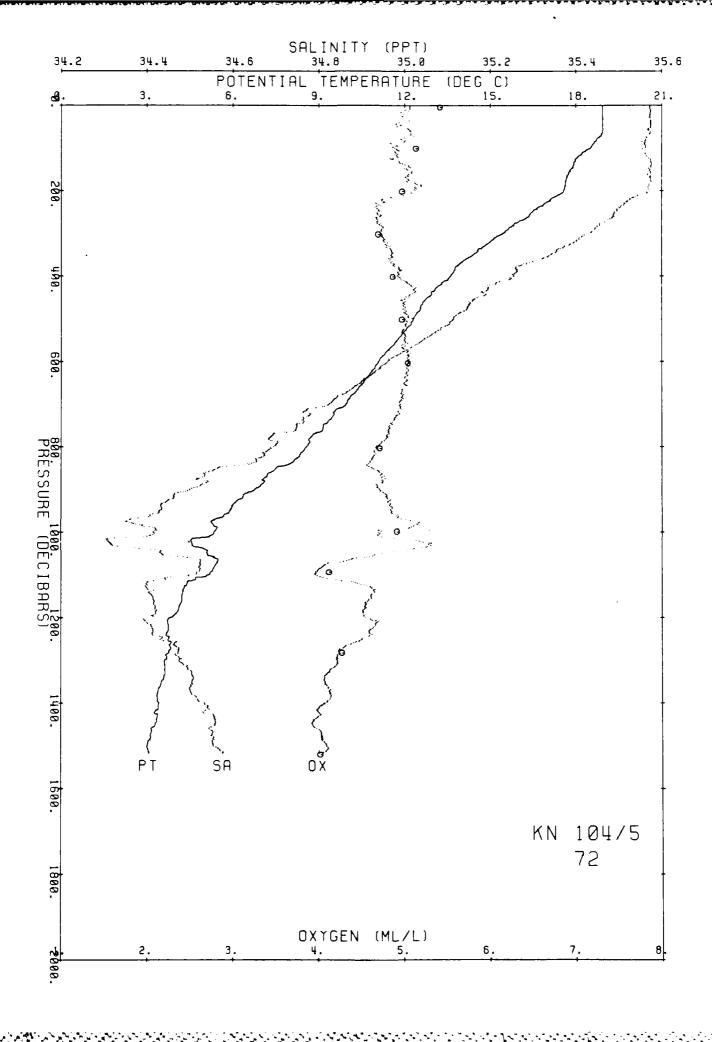


Ship K	N Cr	uise	104	15 S	tatio	o n	72	Cast	ı Di	r		
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10 18 930			5.0						42.066		76	10 0
20 18 938 30 18 944			5.0 5.1						42.064		73 58	19 9 29 9
40 18.944			4.9						42.063		38	39 9
50 18 944			4.9						42.065		6 2	49 8
60 18.944	18.933	35.573	5 1						42.065		13	59 8
70 18 906	18.894	35 564	5.1						42 071		1 00	69 8
80 18.734			5 0						42.125		3 70	79 7
90 18 646			4 8						42.151		2 54	89 7
100 18.529			4.9						42.189		3 11	99 7
120 18 093 140 17.949			4. 9 5.0						42.328		4 21 2 68	119 6 139 5
160 17.782			5.0						42.429		2.38	159 5
180 17 668			5.0						42.471		2.35	179 4
200 17.603			5.1						42.489		1 44	199.3
220 17 153			4.7						42.594		3 48	219 2
240 16.695			4.7						42.714		3 78	239 1
260 16 389			4.7						42.798		3 18	259.0
280 15.862 300 15.491			4.7 4.7						42.930 43.021		3 93 3 23	278.9 298.8
320 15.053			4.8						43.125		3 44	318.7
340 14.606			4.8						43.223		3 27	338.6
360 14.201	14.148	35.315	4.8	83.8	26.400	30.770	35.043	39.222	43.310	172.9 .80	3 04	358.5
380 13.826			4.9						43.375		2 49	378 4
400 13.670			4.9						43.416		2 20	398.3
450 12.855 500 12.383			5.1 5.0						43.578		2 58	448 0
550 11.805			5.0							154.8 1.02 150.4 1.10	1.88	497.7 547.4
600 11.164			5.0							145.6 1.17	2.01	597.0
650 10.648			5.0							141.9 1.25	1.79	646.7
700 10.036	9.953		4.9							137.7 1.32	1.89	696.3
750 9.247	9.162		4.8							130.6 1.38	2 34	745.9
800 8.657	8.570		4.7							125.9 1.45	1.95	795.5
900 6.845 1000 5.443	6.759 5.357		4.7 4.7							113.8 1.57 101.4 1.67	2.15	894.7 993.8
1100 5.246	5.152		4.0						44.941			1092 8
1200 3.907	3.816		4.6						45.151			1191.8
1300 3.717	3.619		4.2						45.239			1290.8
1400 3.518	3.413		4.1						45.326			1389 7
1500 3.118	3.009		4.1						45.421			1488.5
1518 3.163	3.052	34.576	4.0	53.7	27.542	32.167	36.689	41.109	45.429	65.1 2.10	1.37	1506.3
PR TE	PT	SA	02	SI	PO	N3	N2 NH	4 50	Sı	S 2	S 3	S4 DE
4 18.944				4.3						63 33.954 38		
101 18 344				4.3						23 34.123 31		
201 17.457					0.38					50 34 366 38		
302 15.191				6.2						10 34.865 3		
401 13.719				7.4						51 35.133 3		
501 12.348				5.6						31 35.341 39		
603 11.061 803 8.473		34.948 34.673		6.8 12.7	1.08 1.58					73 35.509 3° 52 35.844 40		
998 5.445		34.410		20.9						32 36.197 40		
1094 5.319		34.515		34.1	2.31							
1282 3.874	3.776			36.0		26.0	ο.	22 27.3	86 31.9	93 36.497 40	899 4	4.937 1082 5.202 1268 5.426 1502
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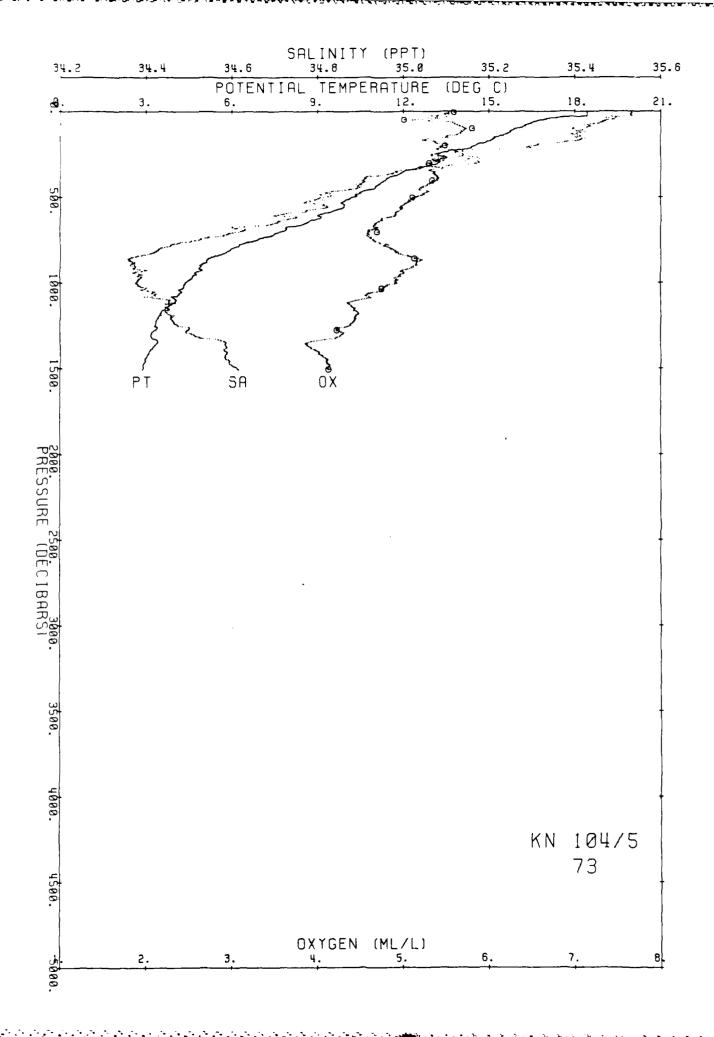
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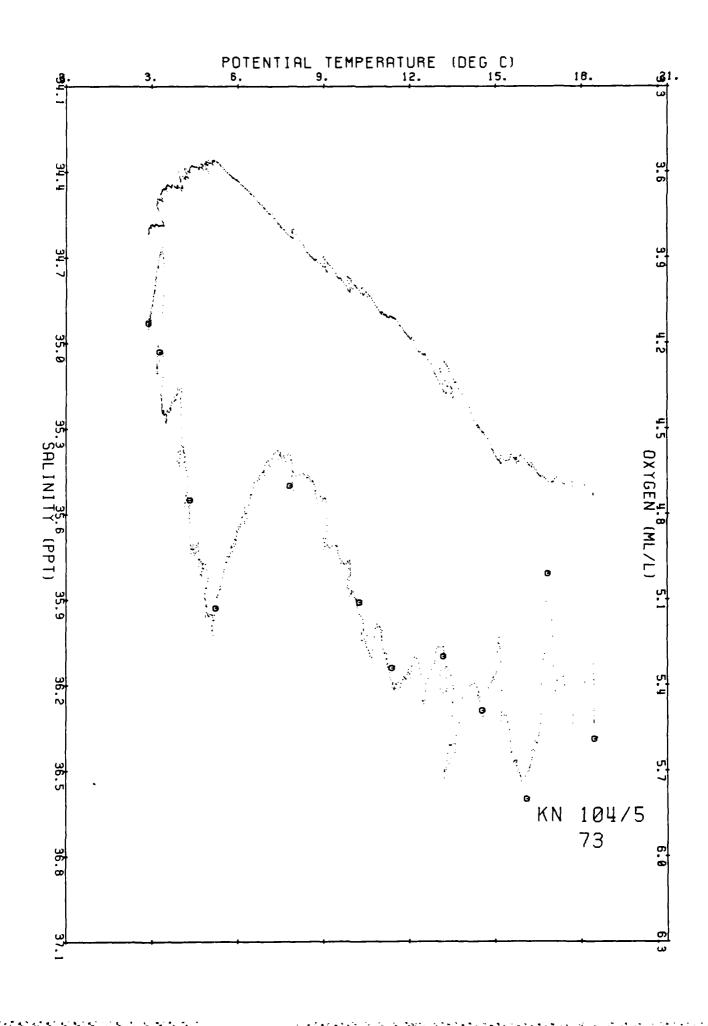
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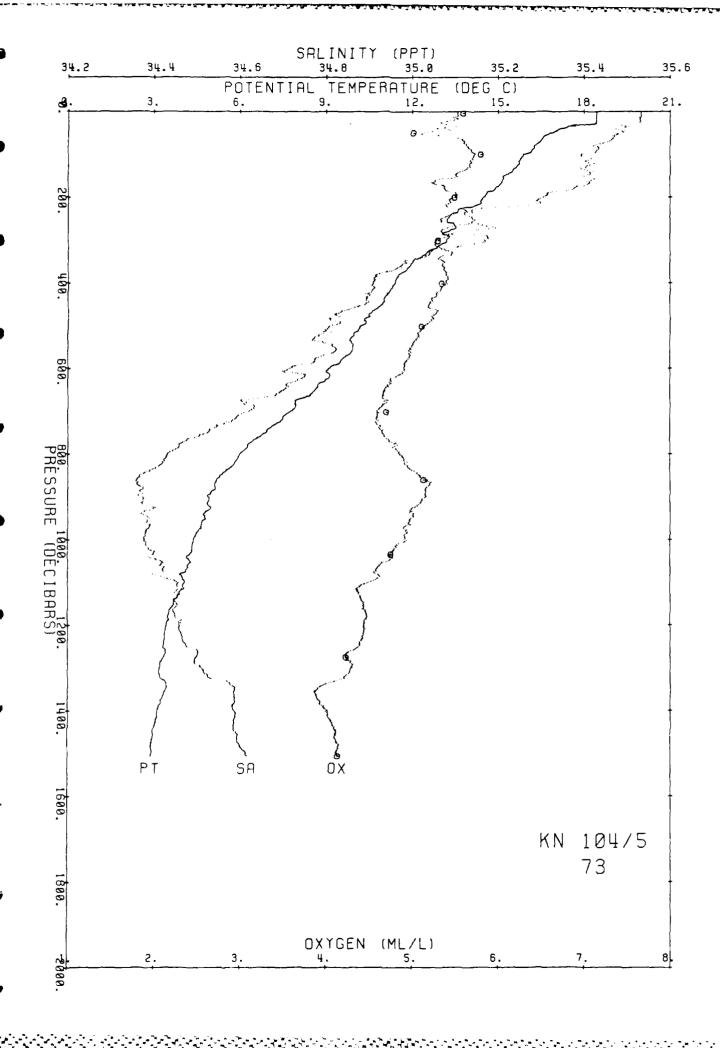
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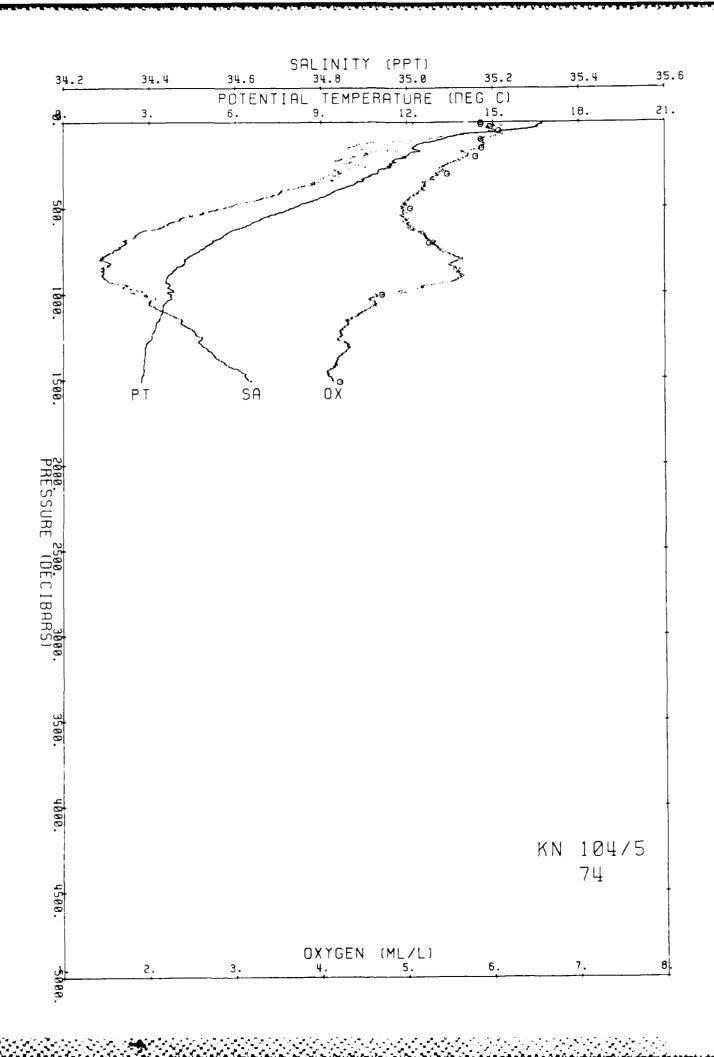


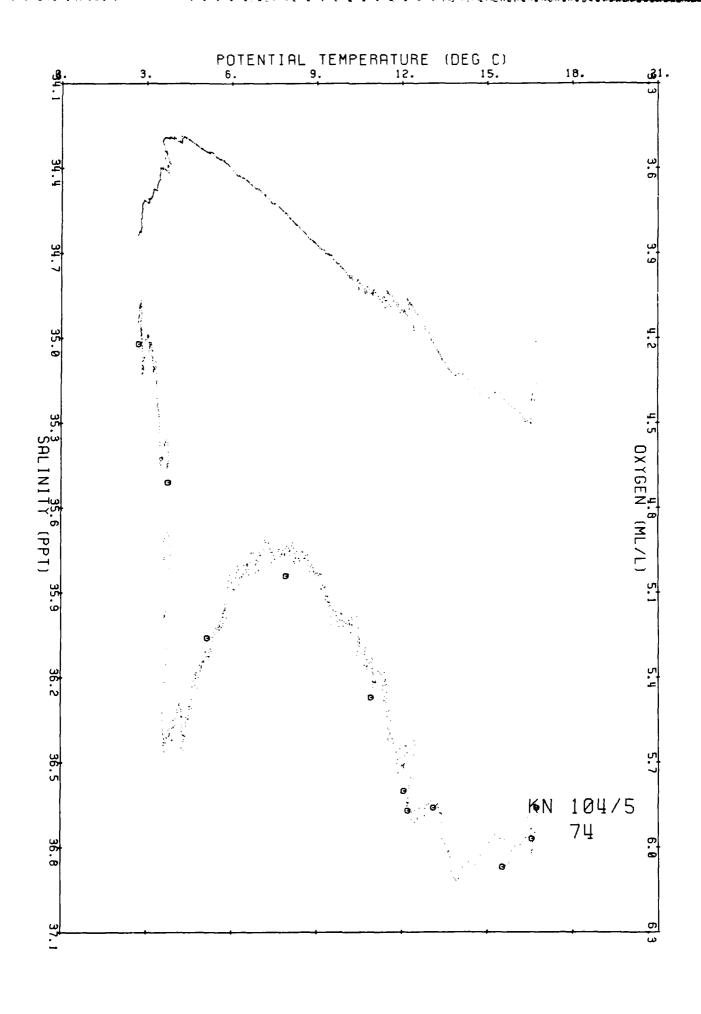


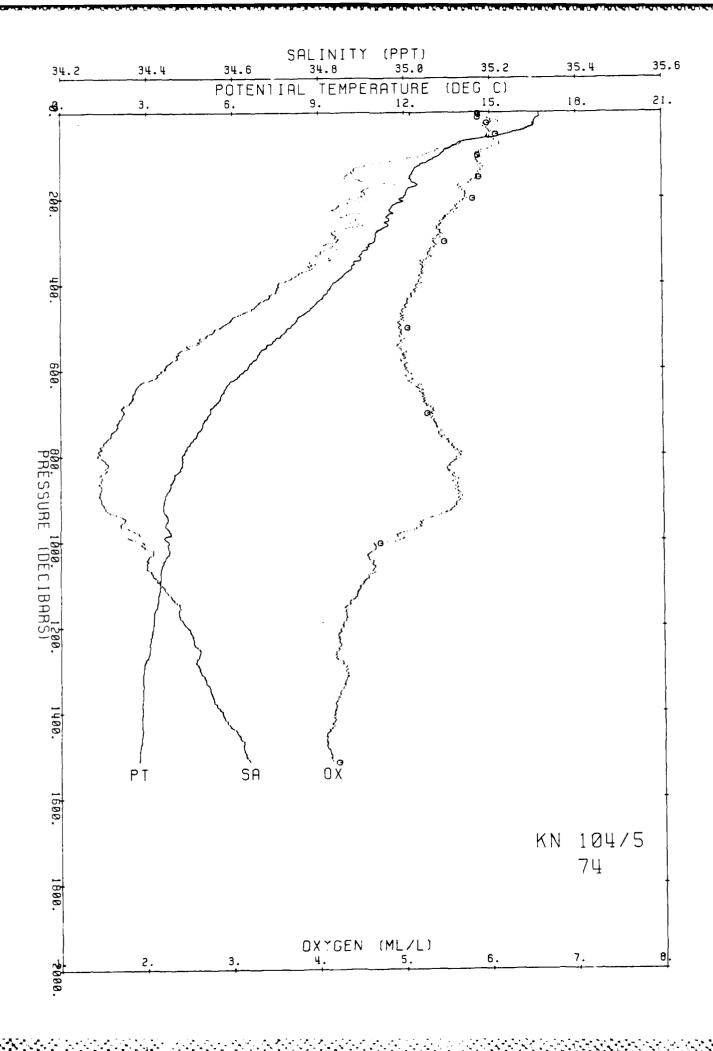
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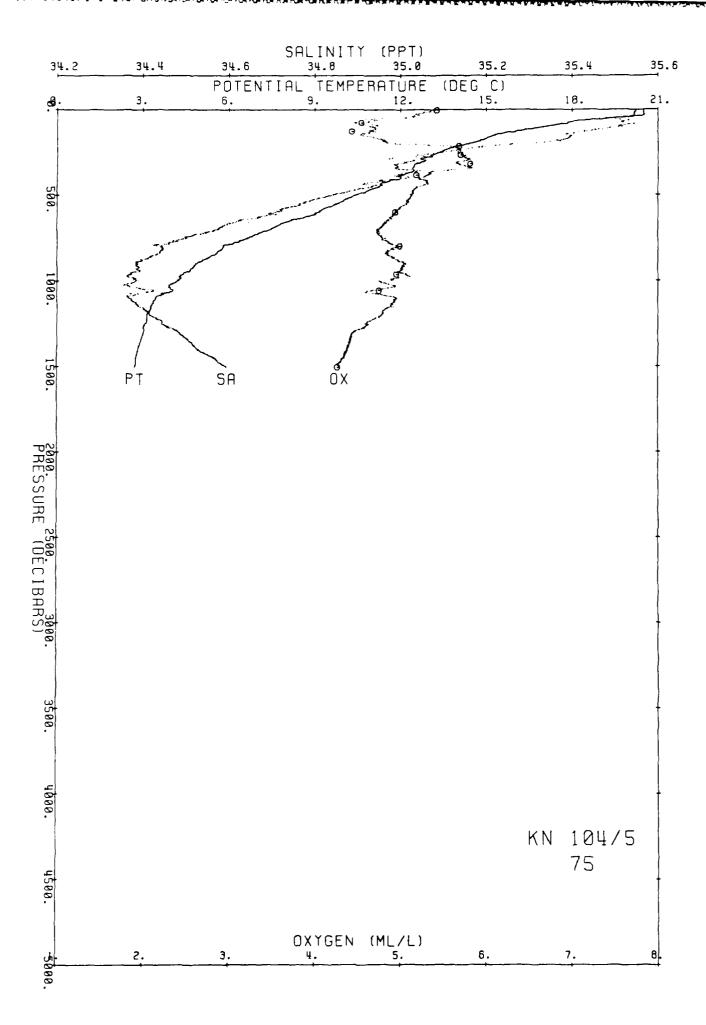
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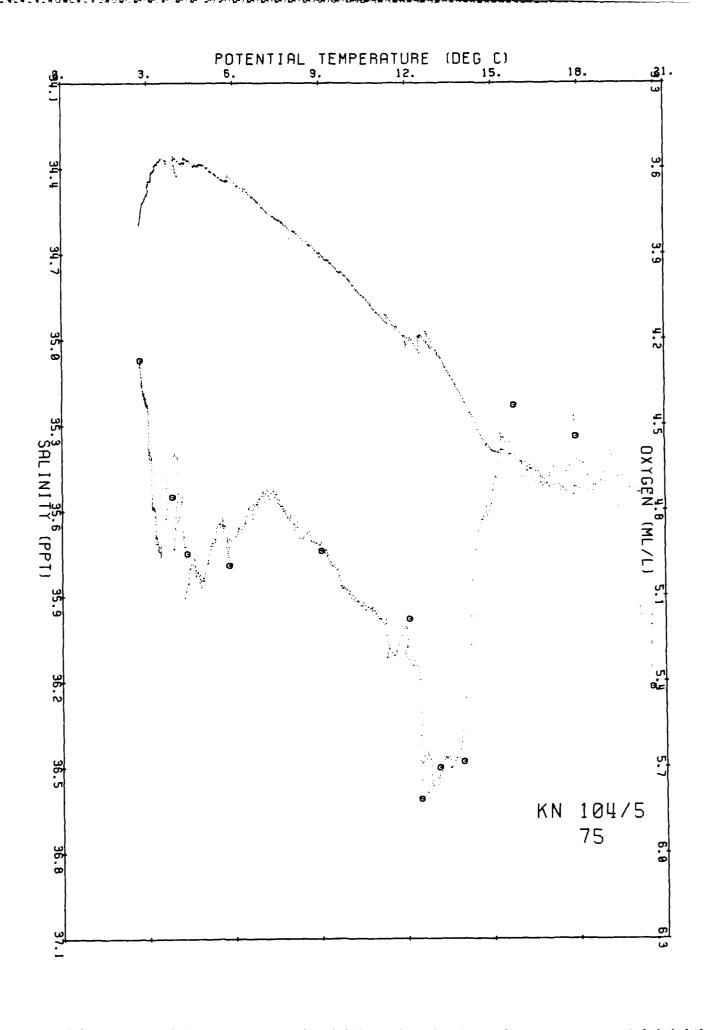
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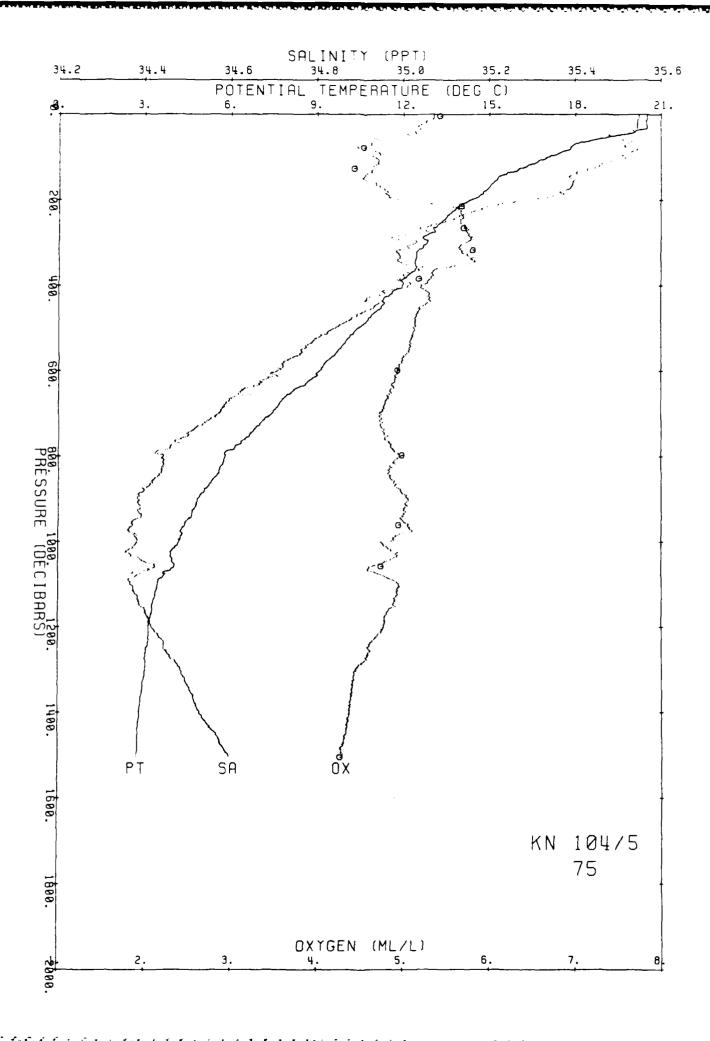
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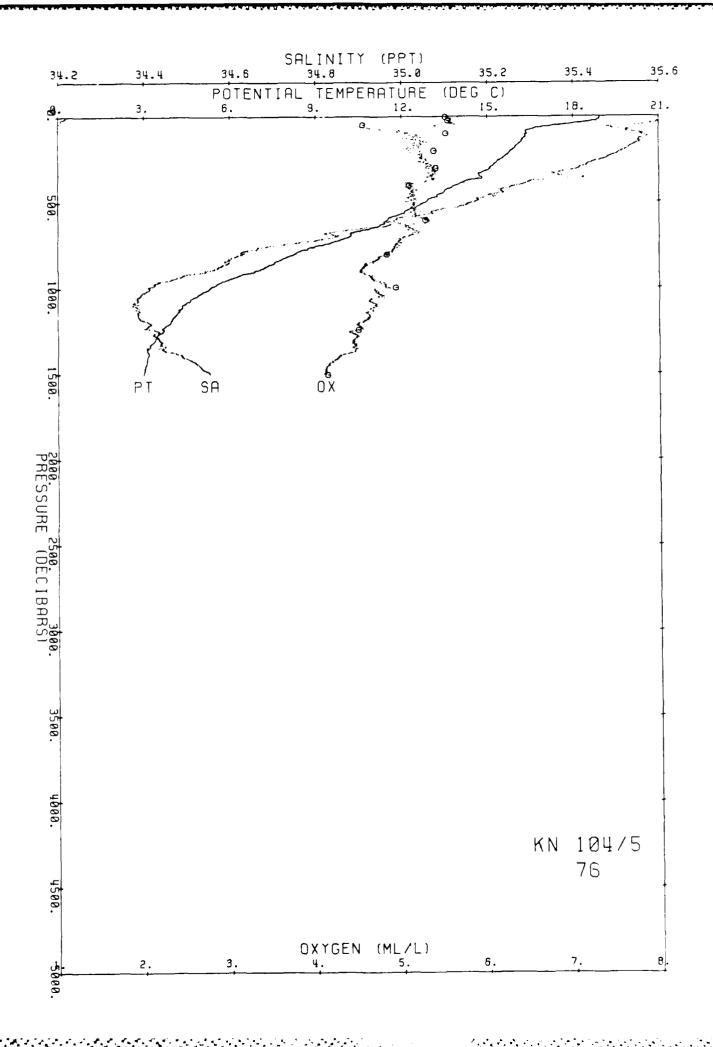
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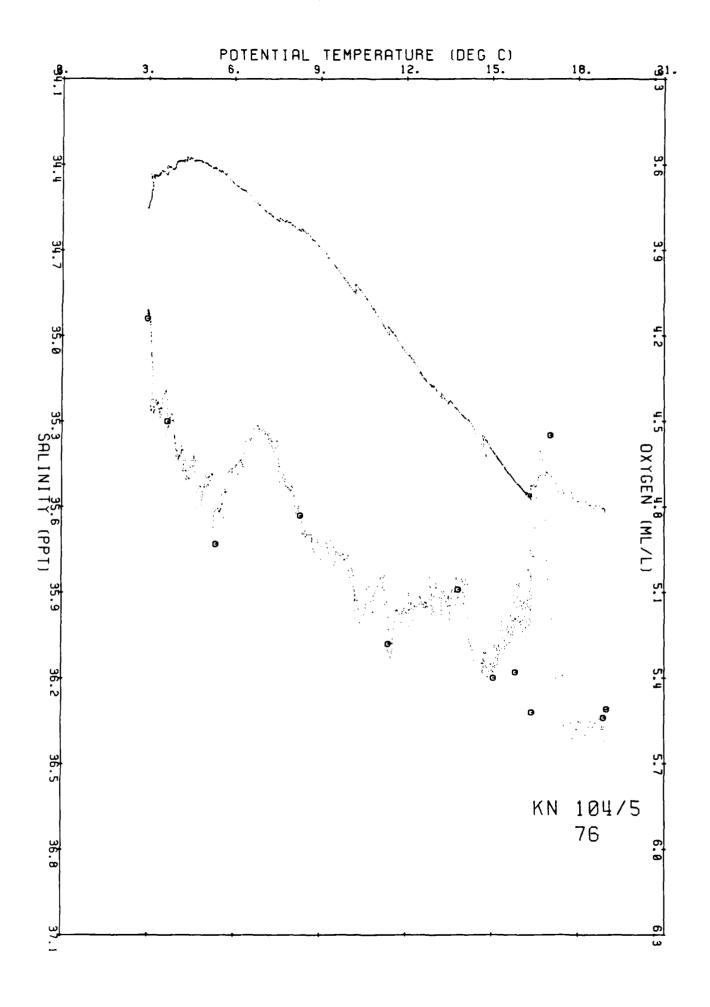
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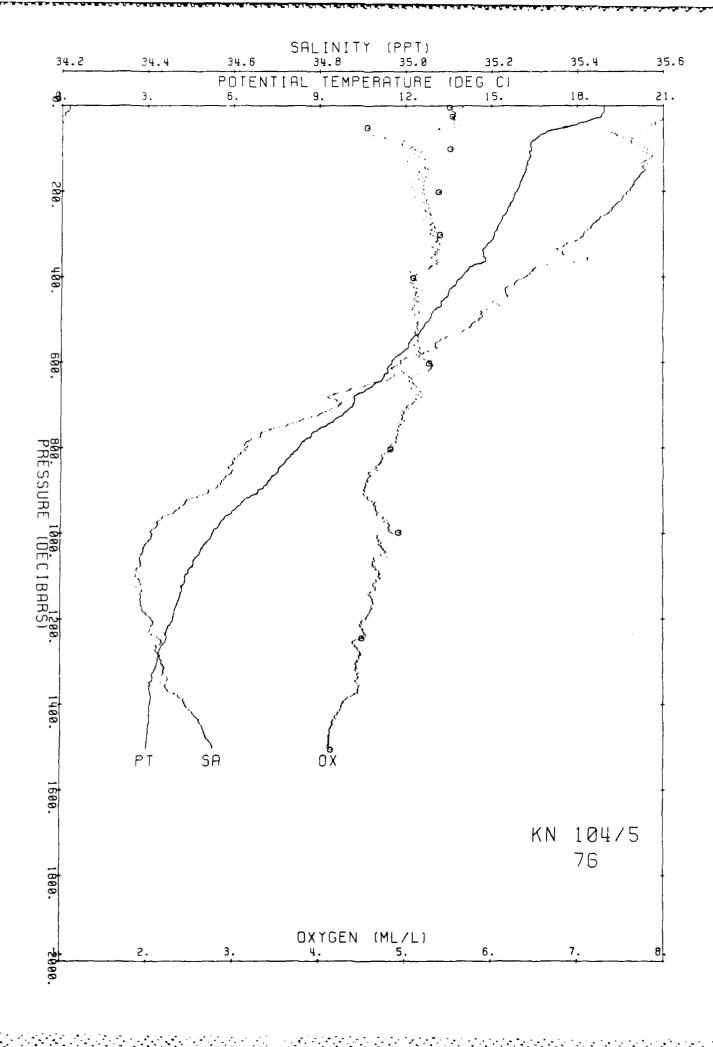
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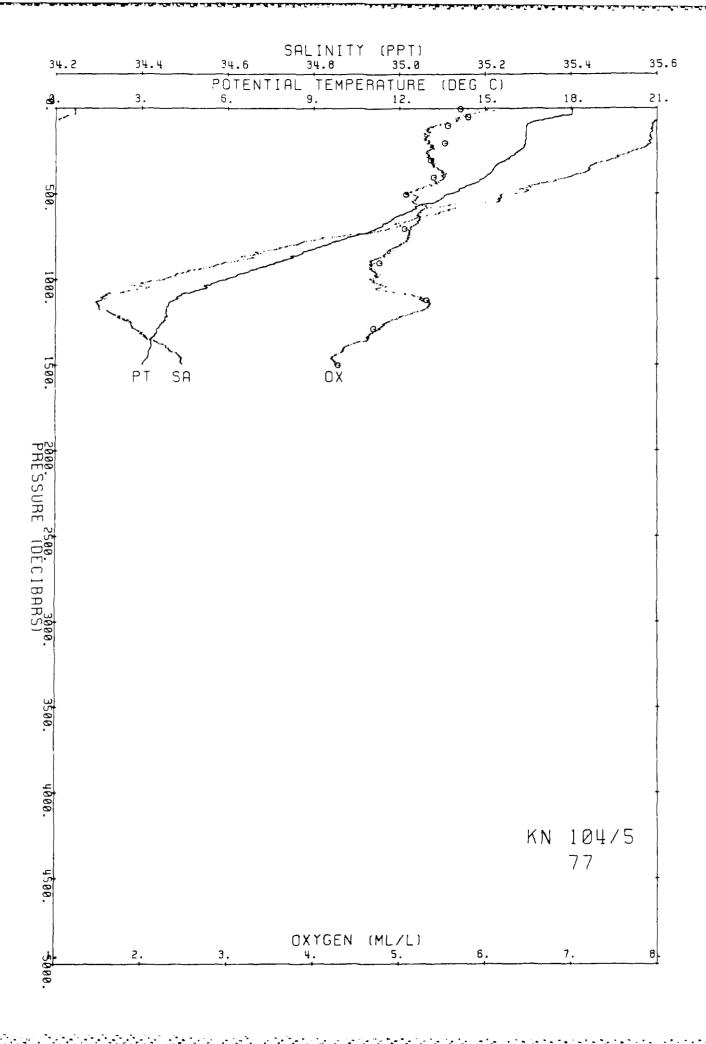
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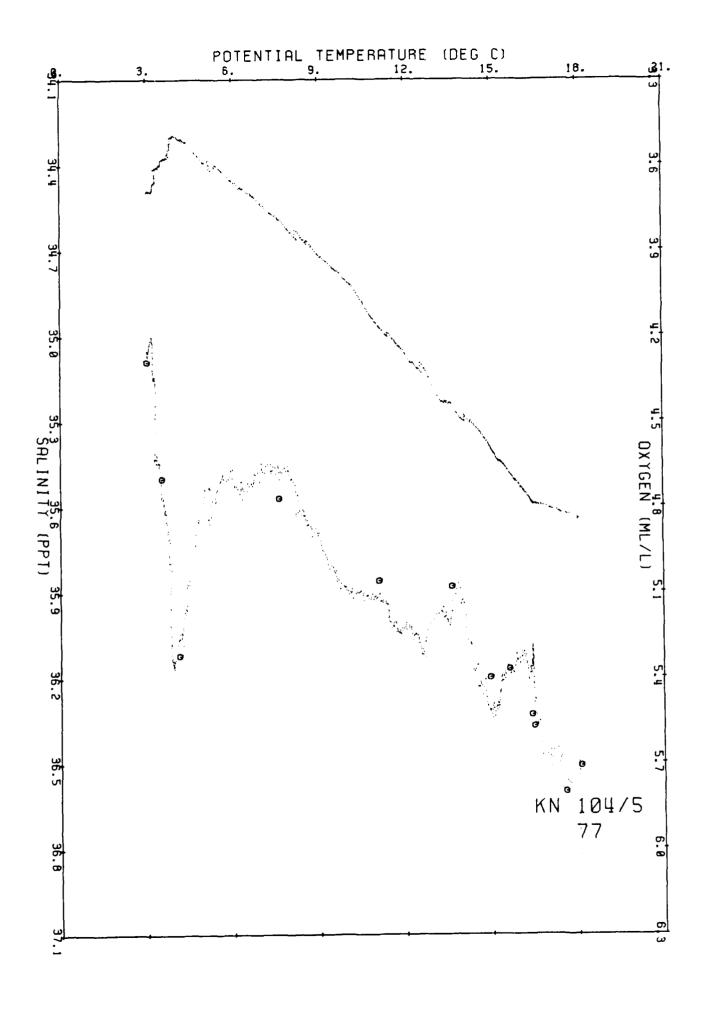


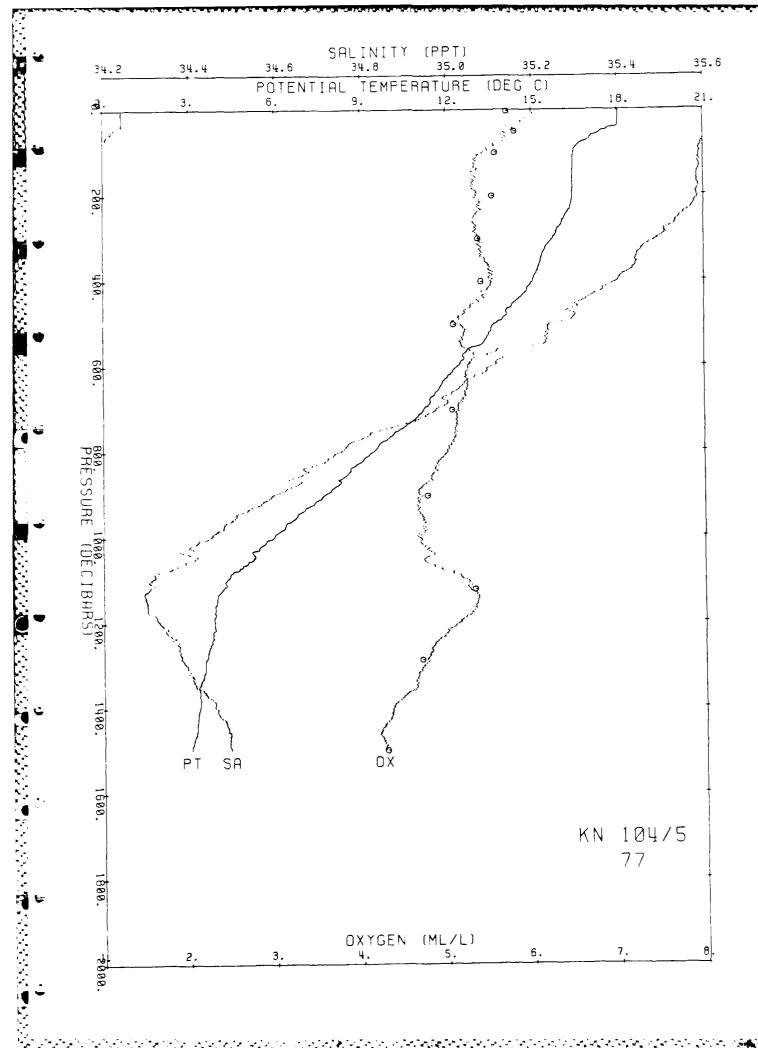




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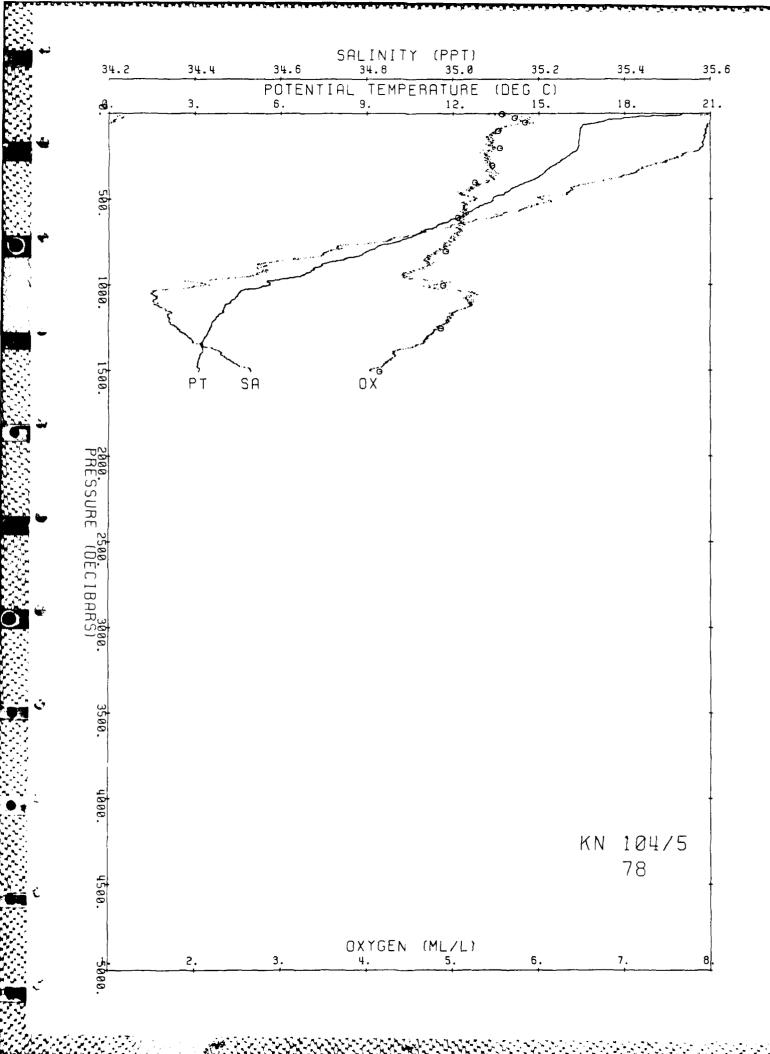
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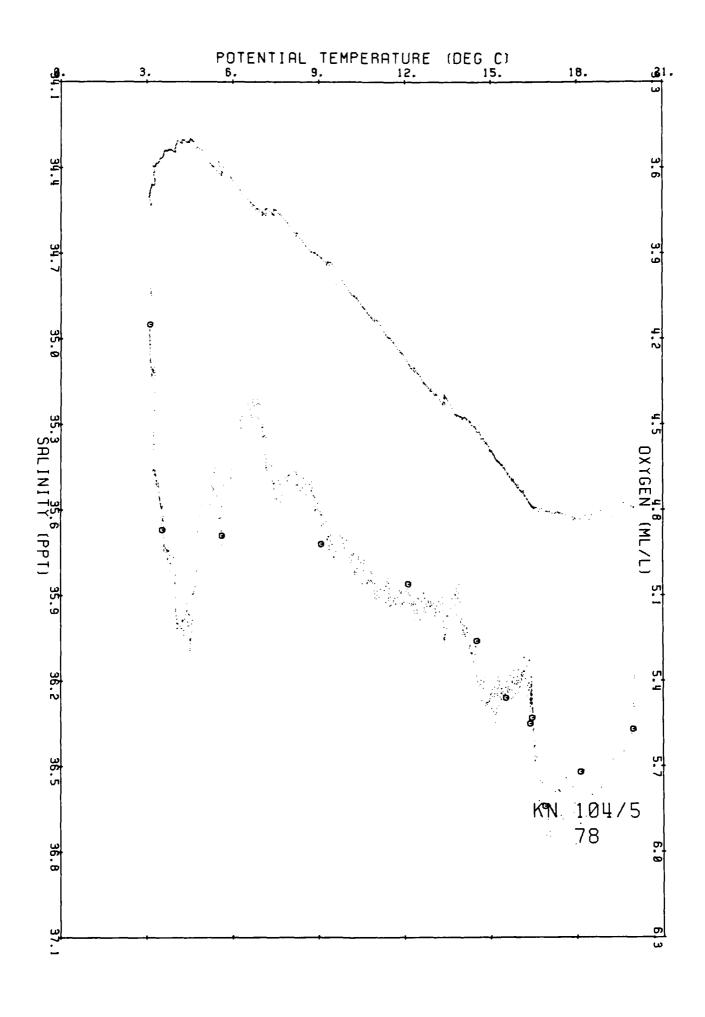
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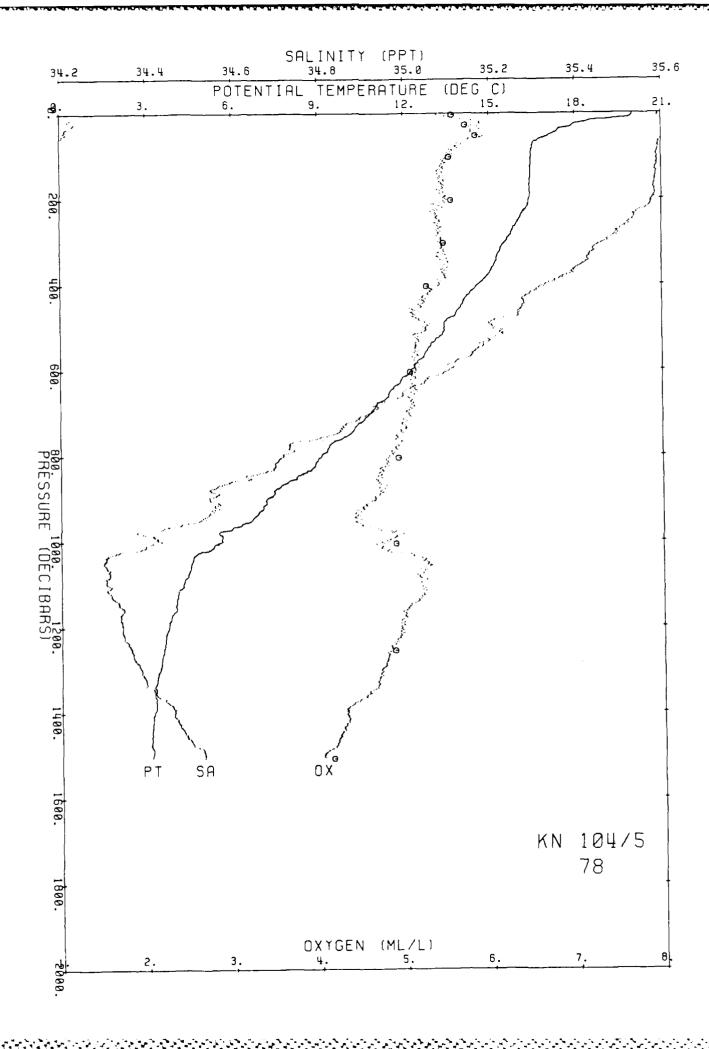
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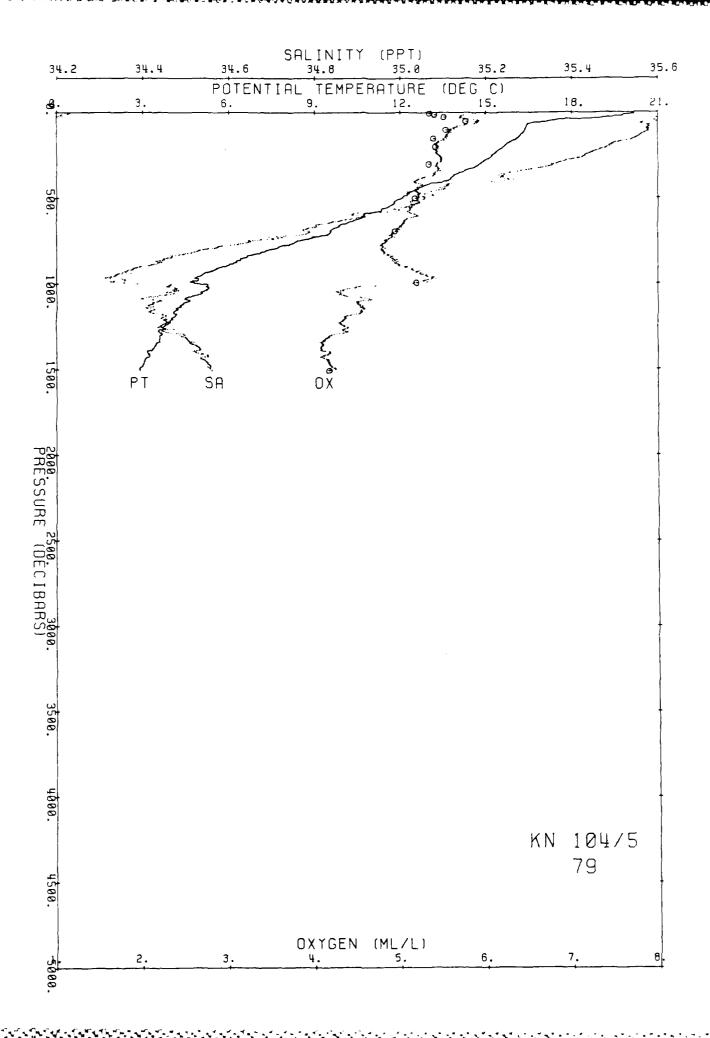


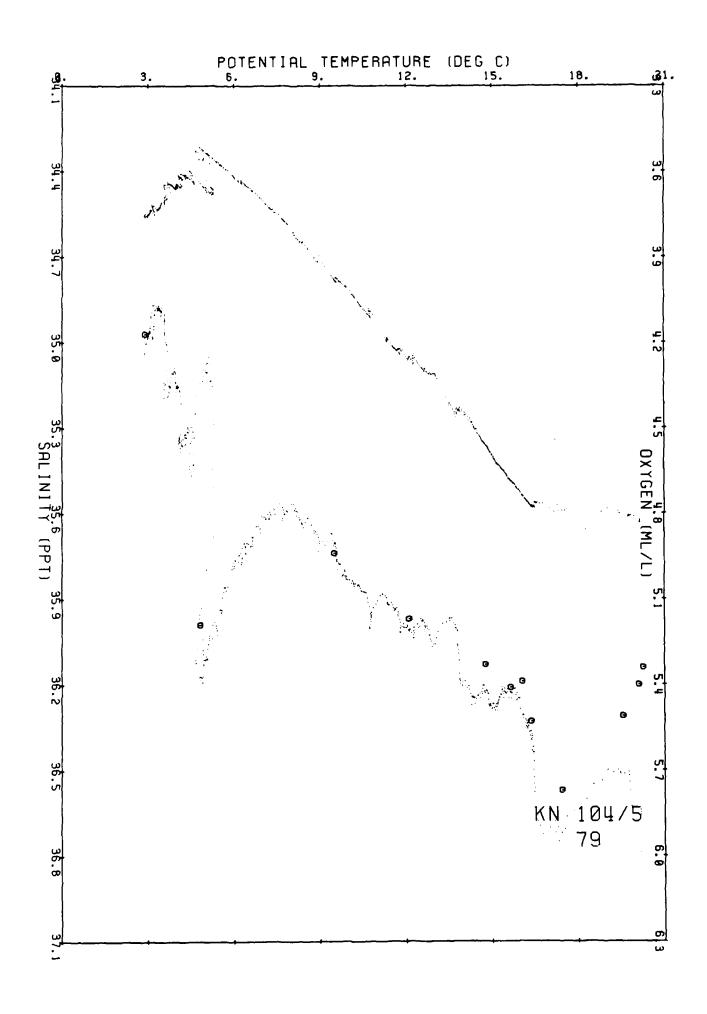
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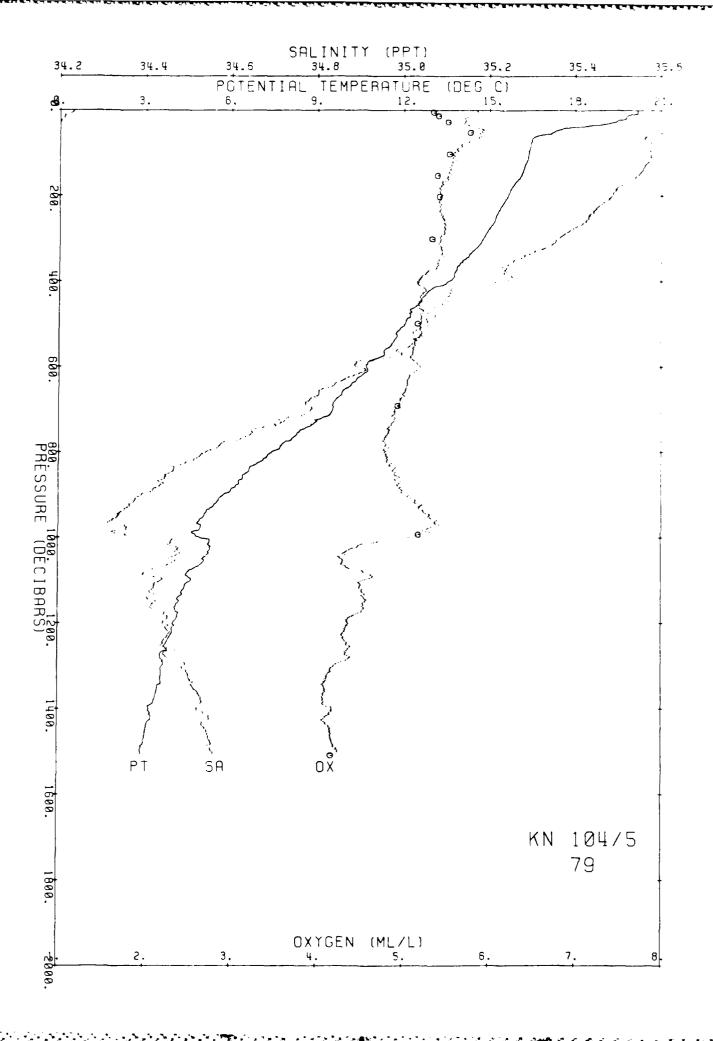
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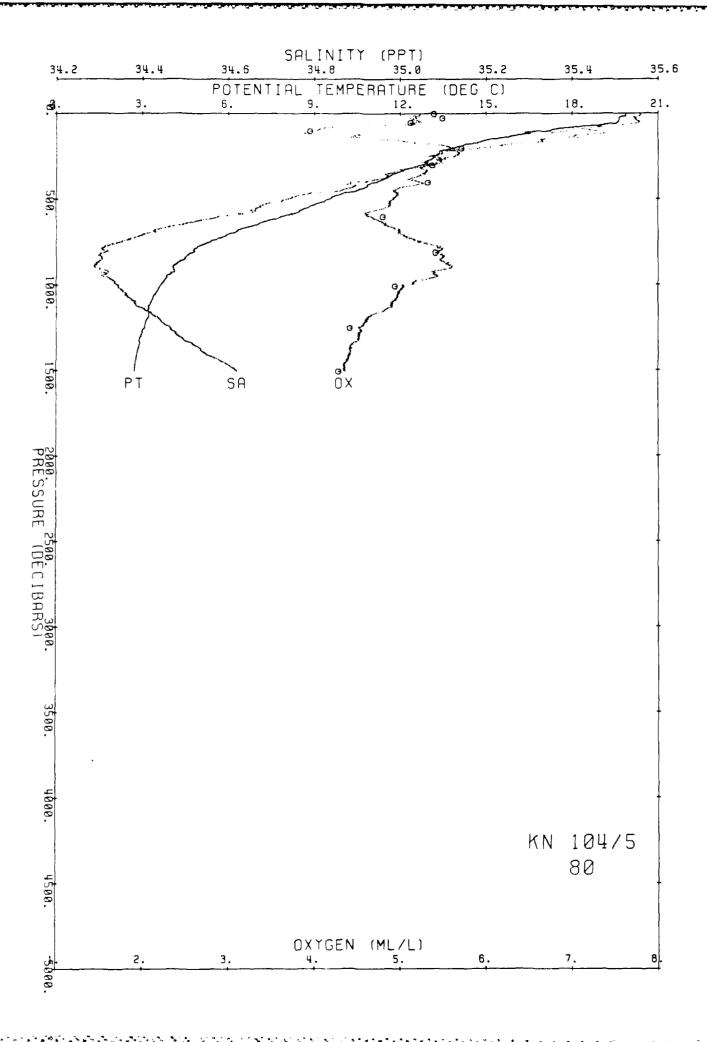
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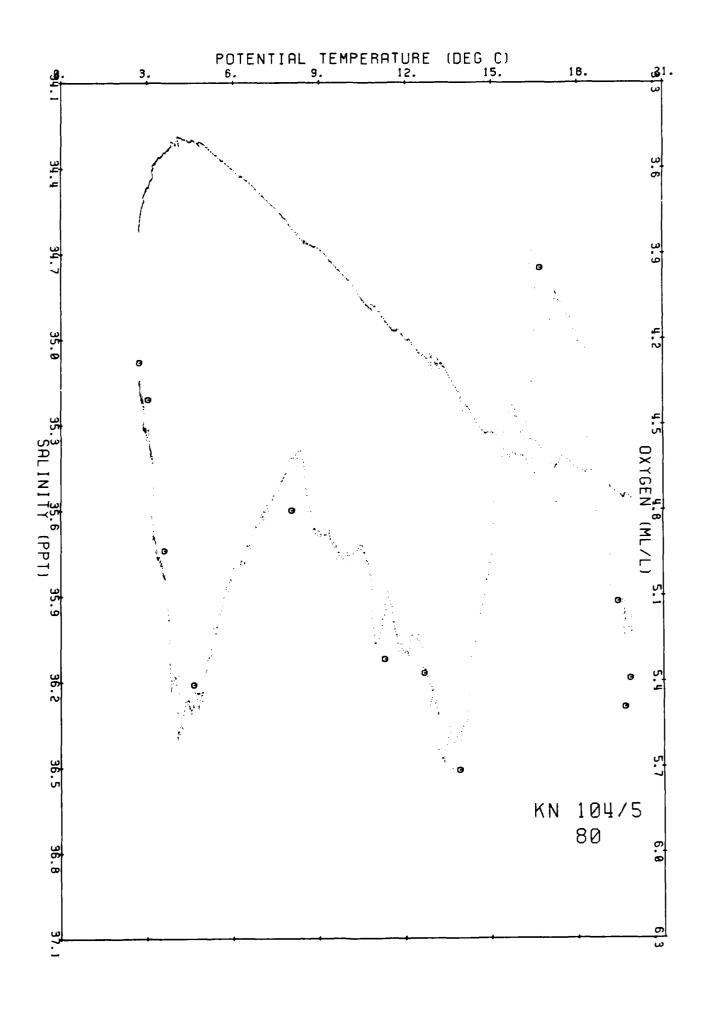
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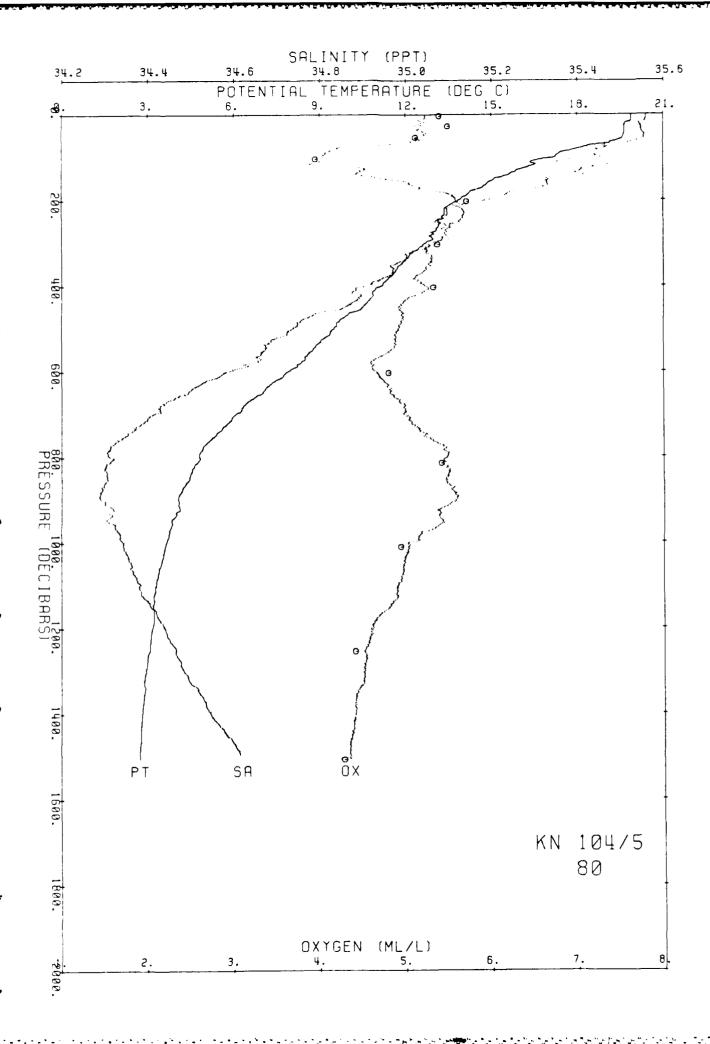
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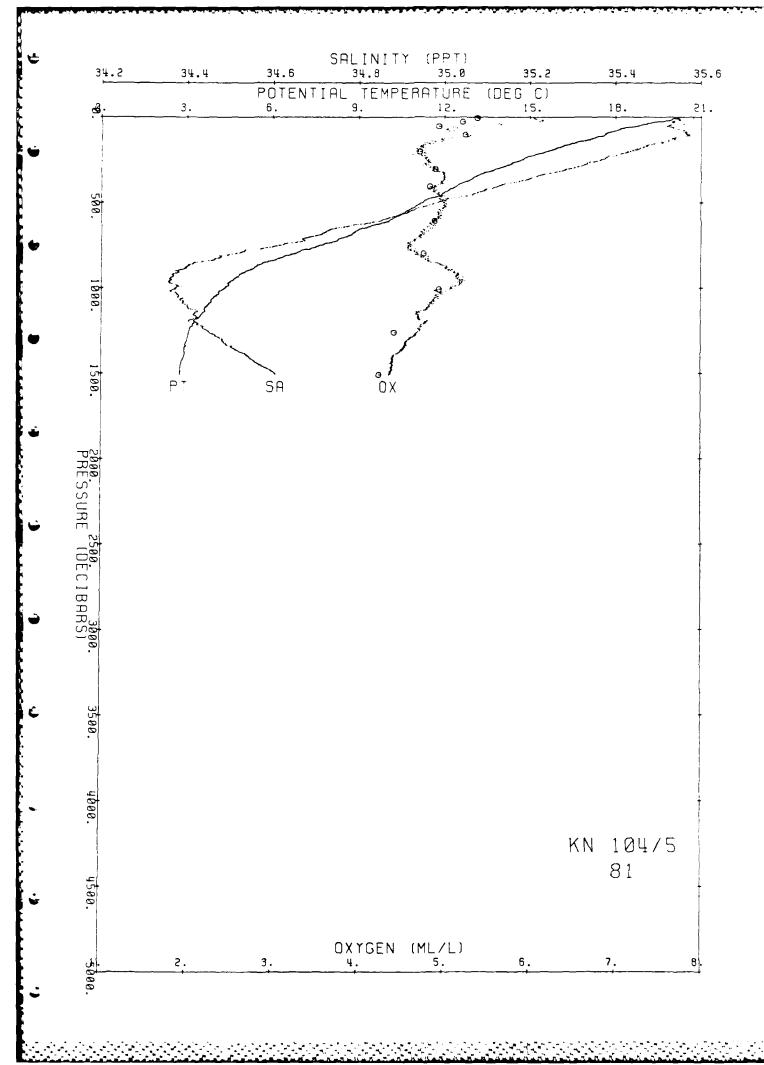
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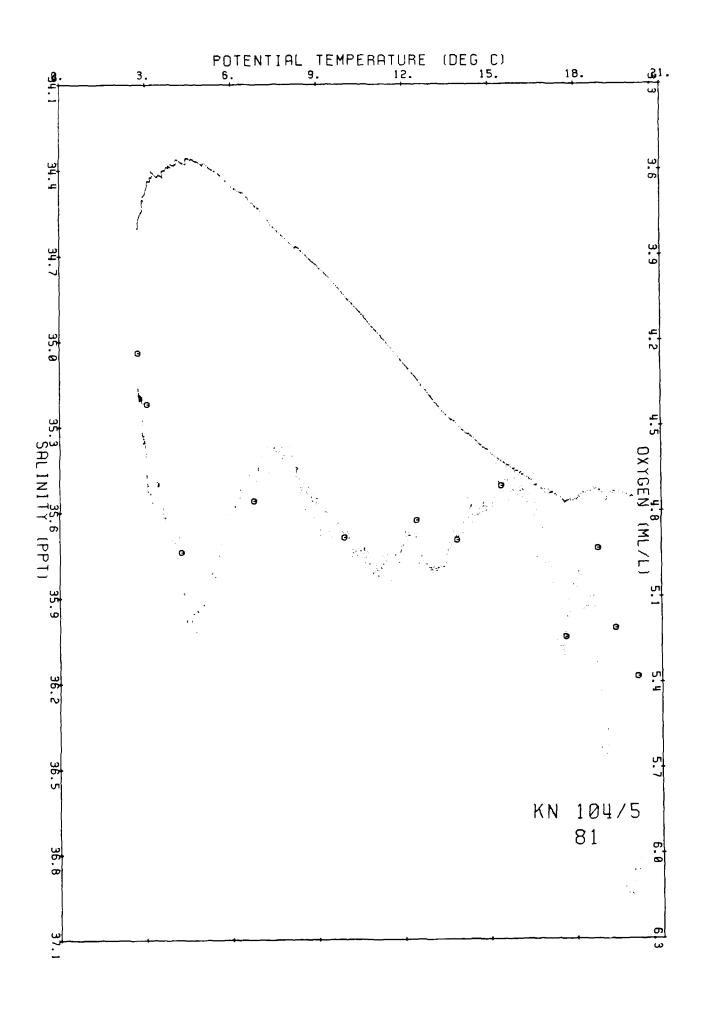
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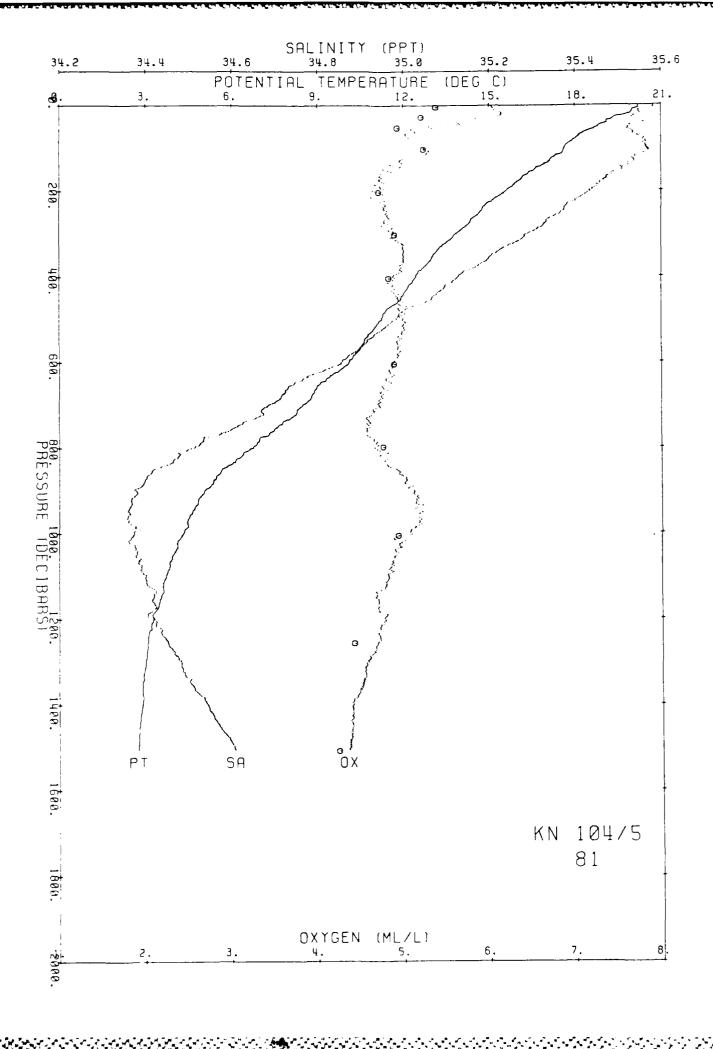
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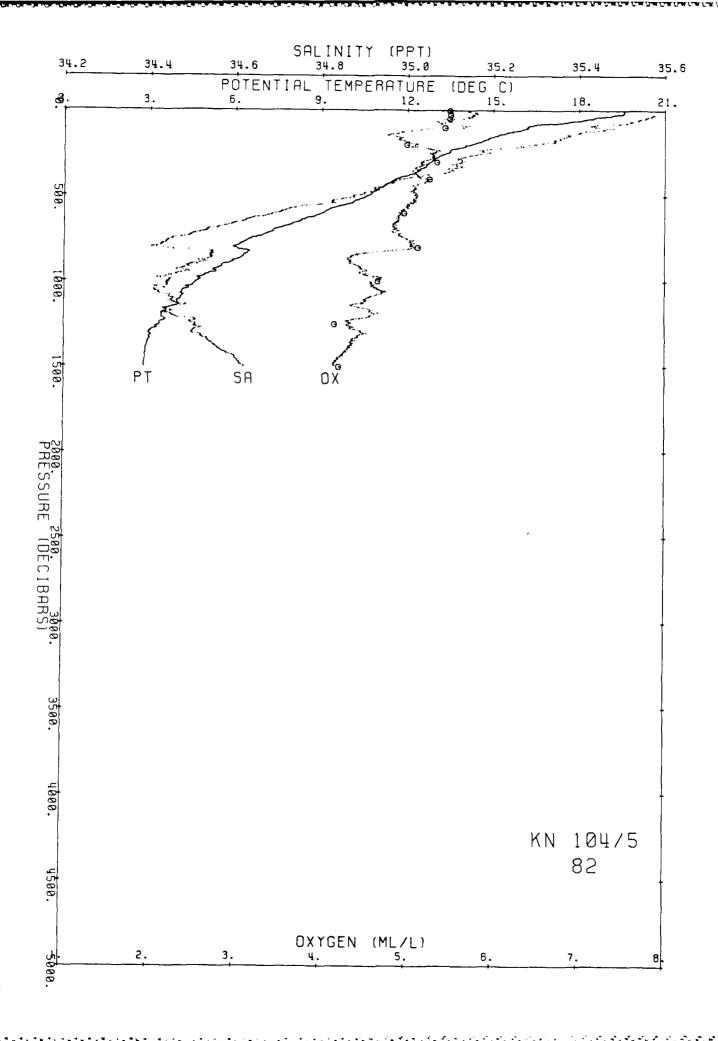
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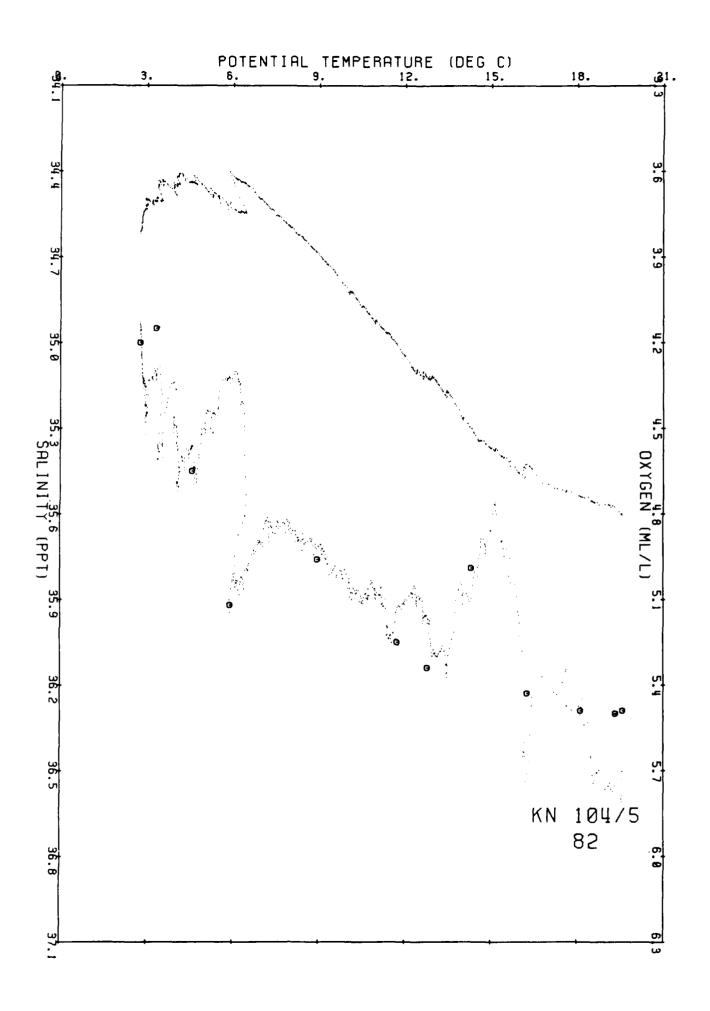
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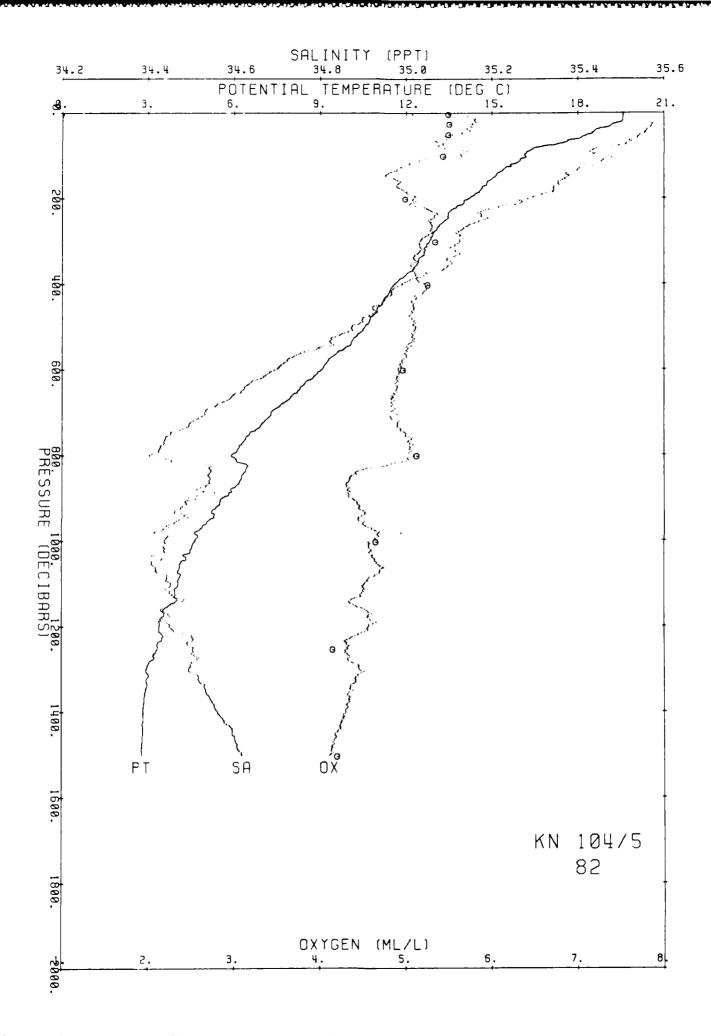
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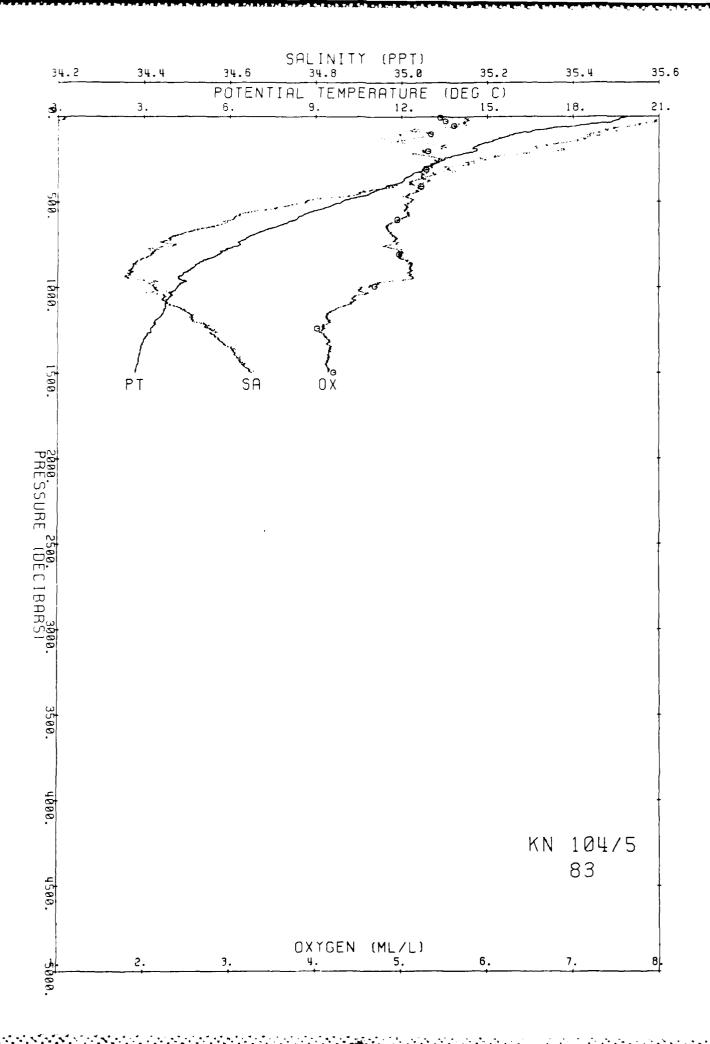


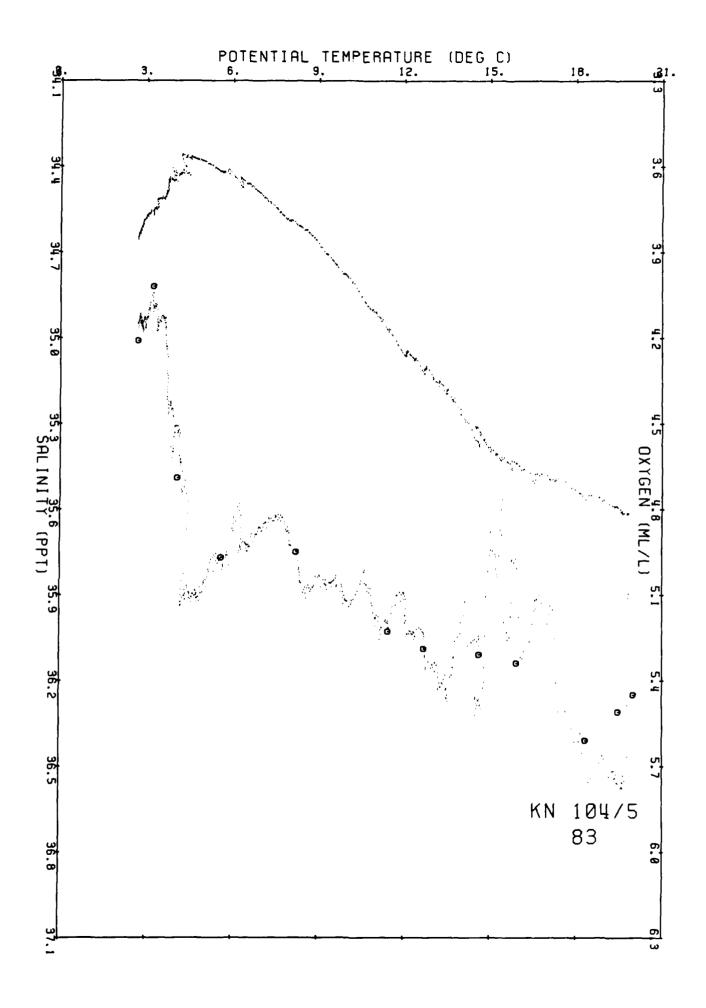


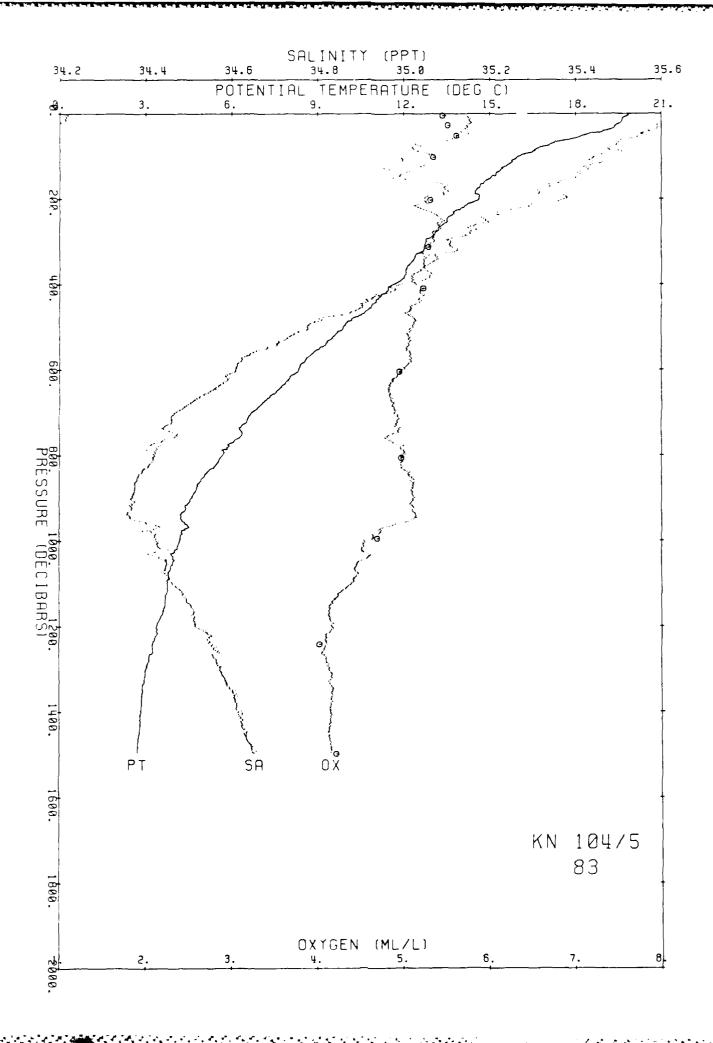
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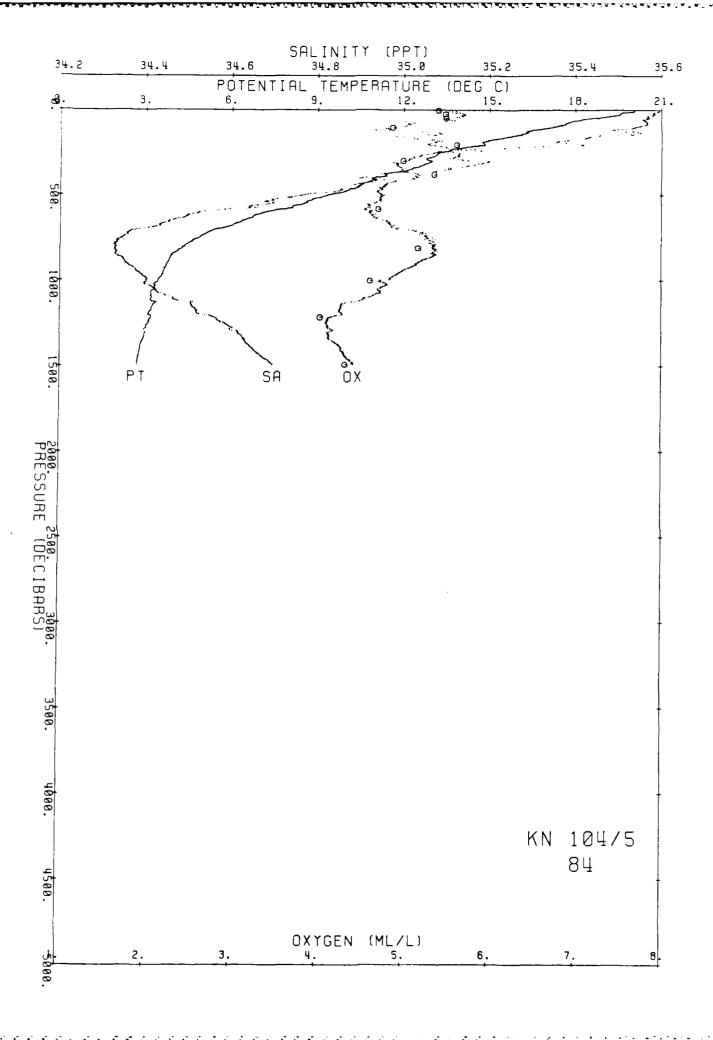
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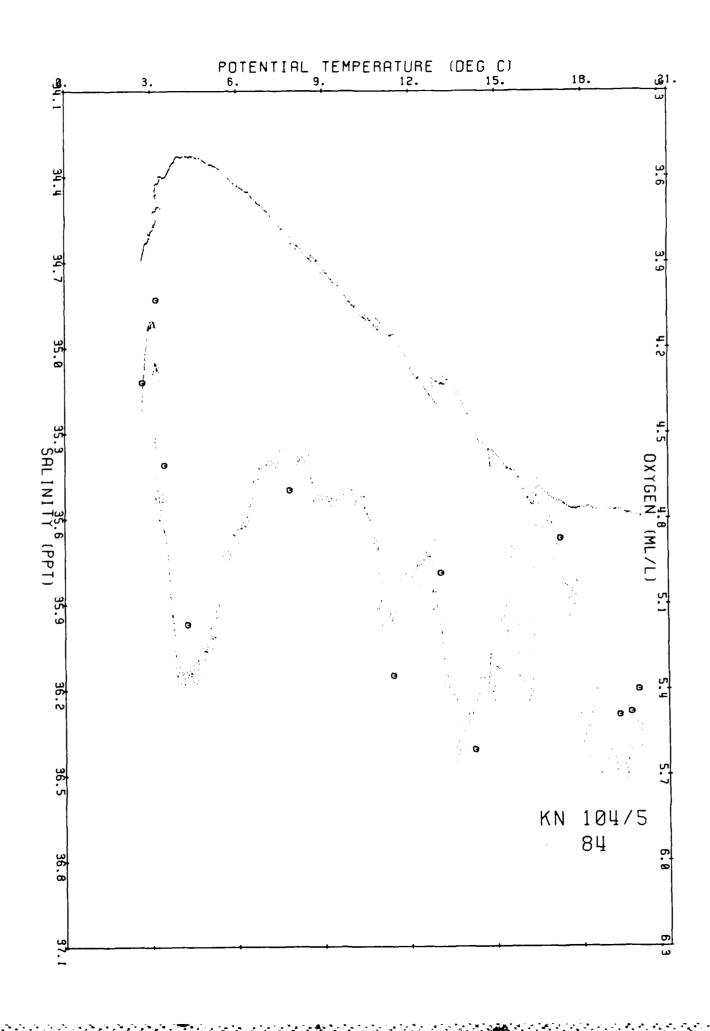
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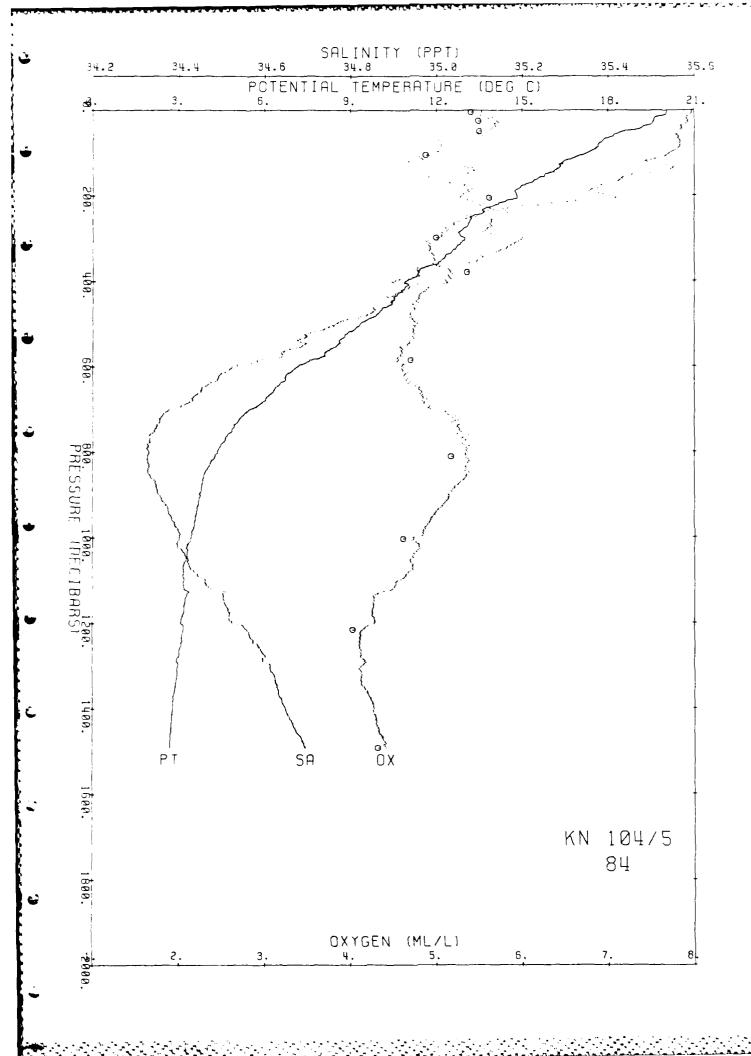
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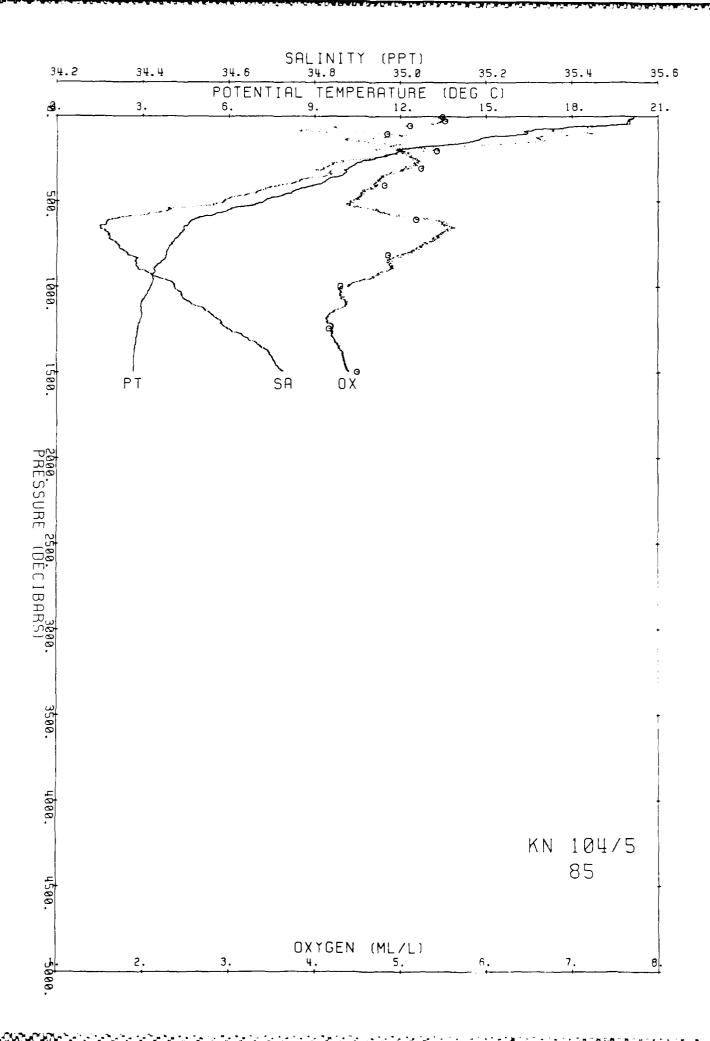
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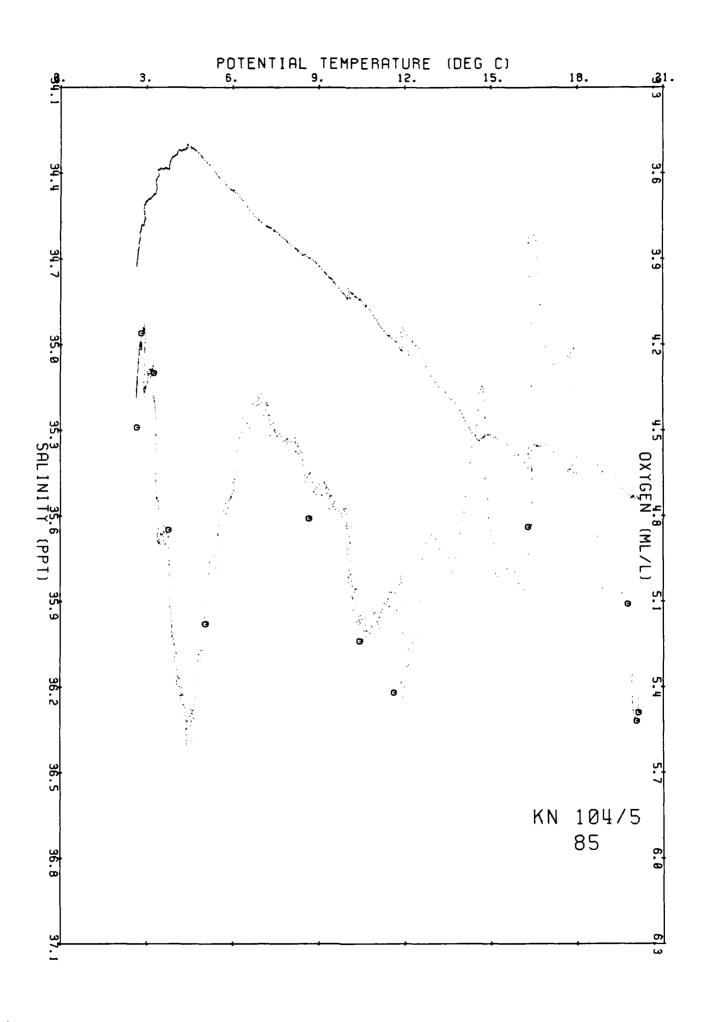
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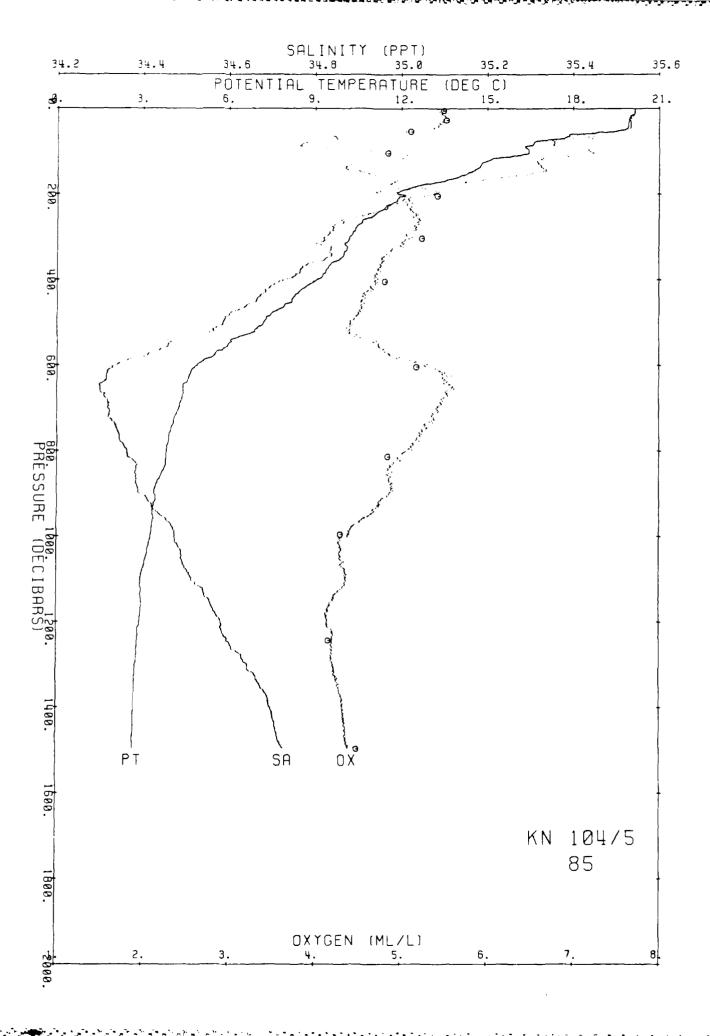
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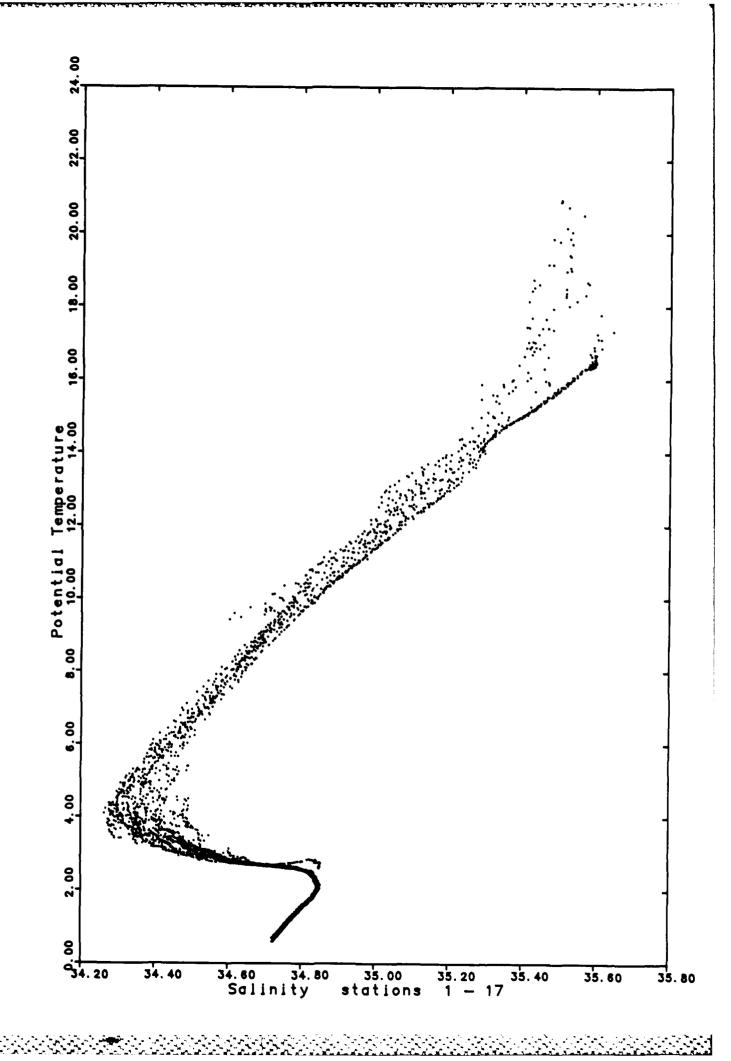
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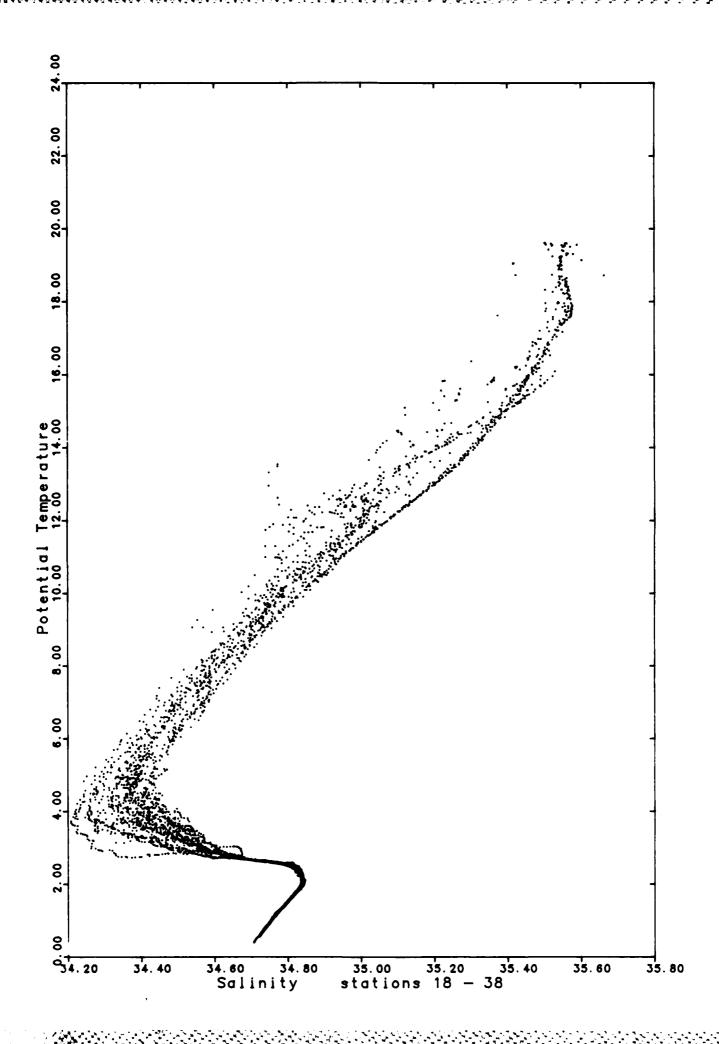
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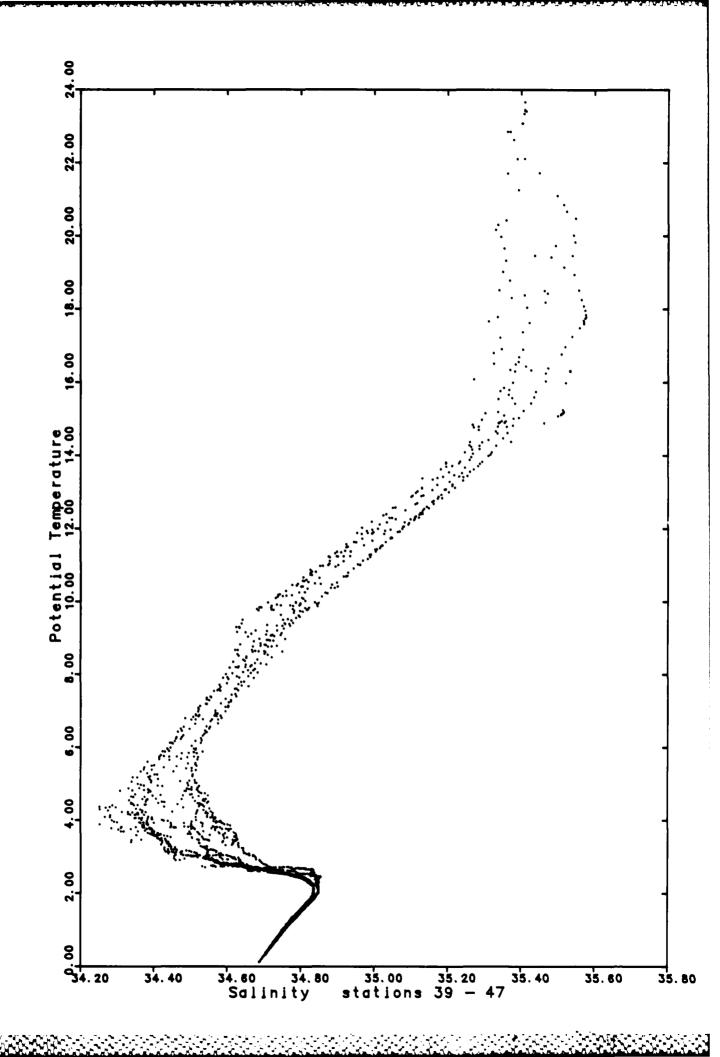


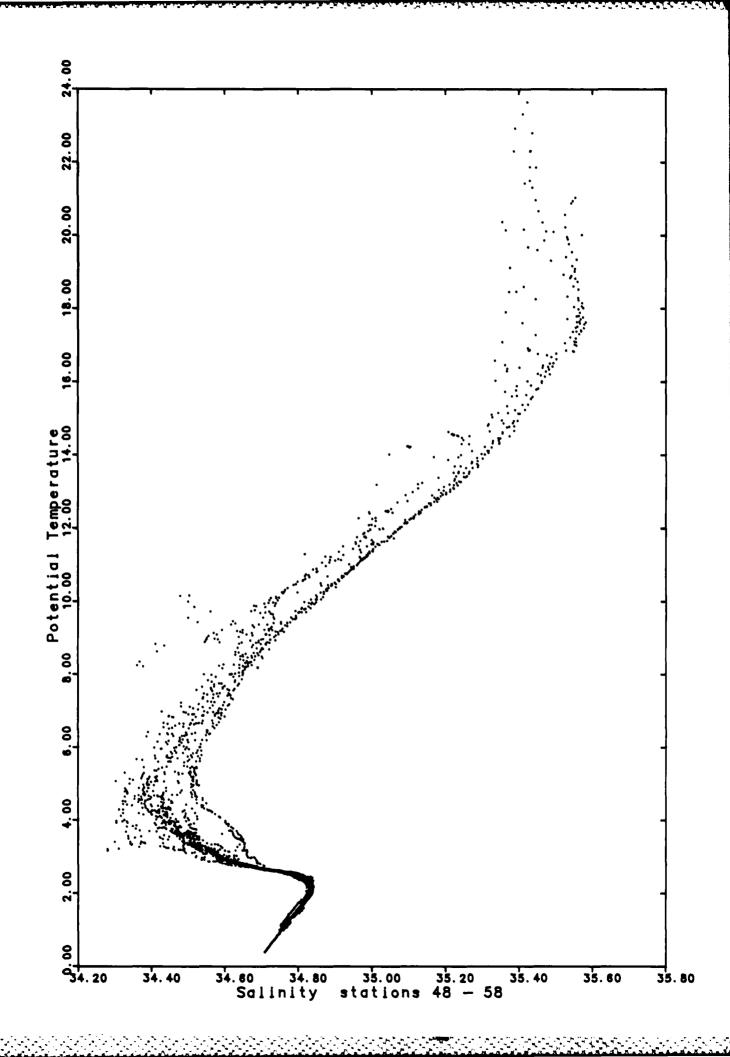


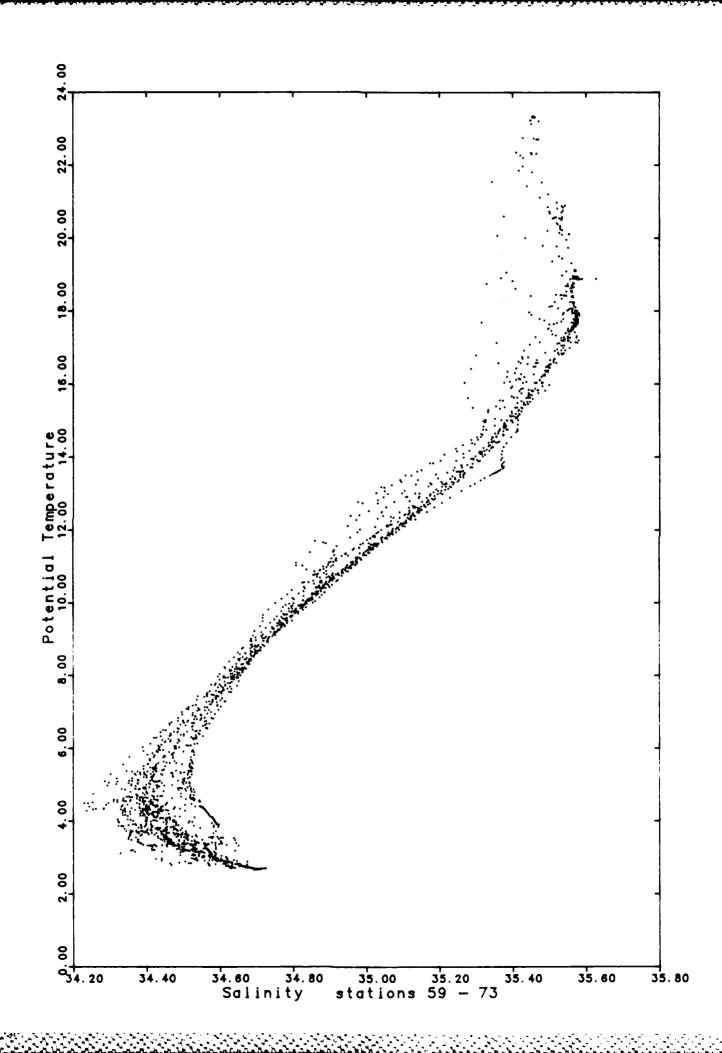


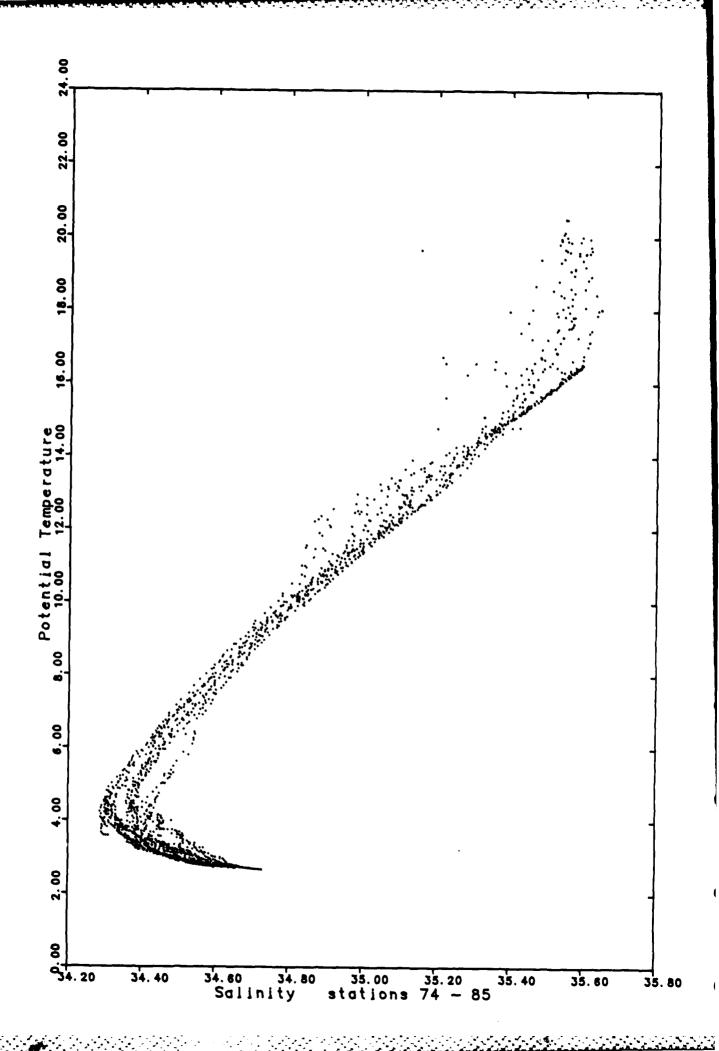


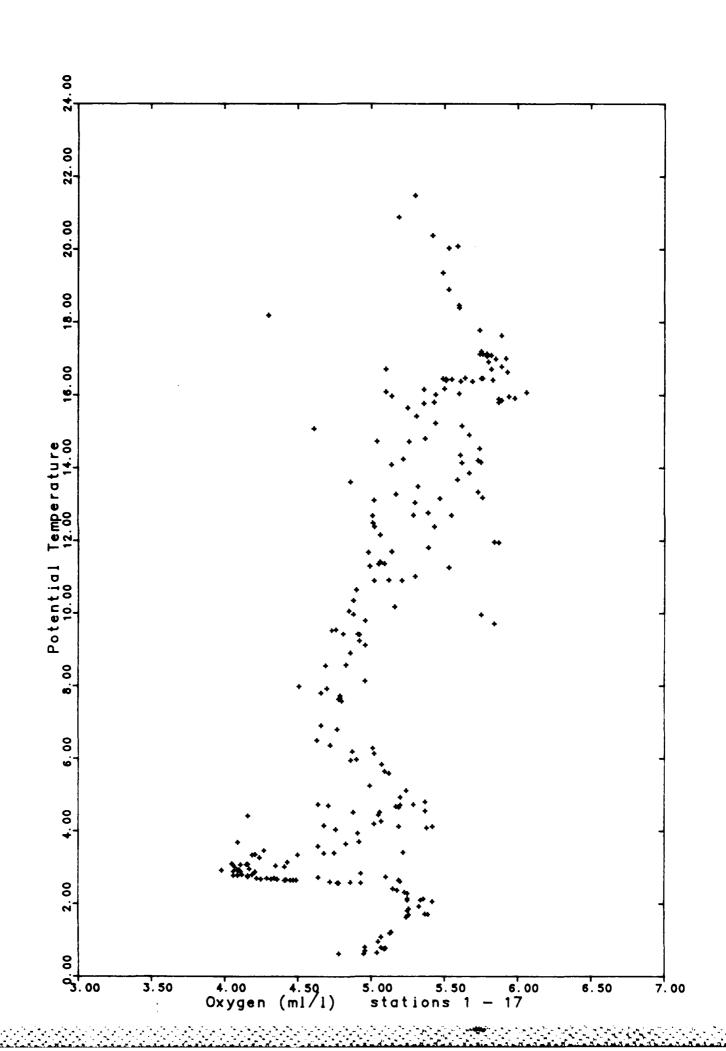


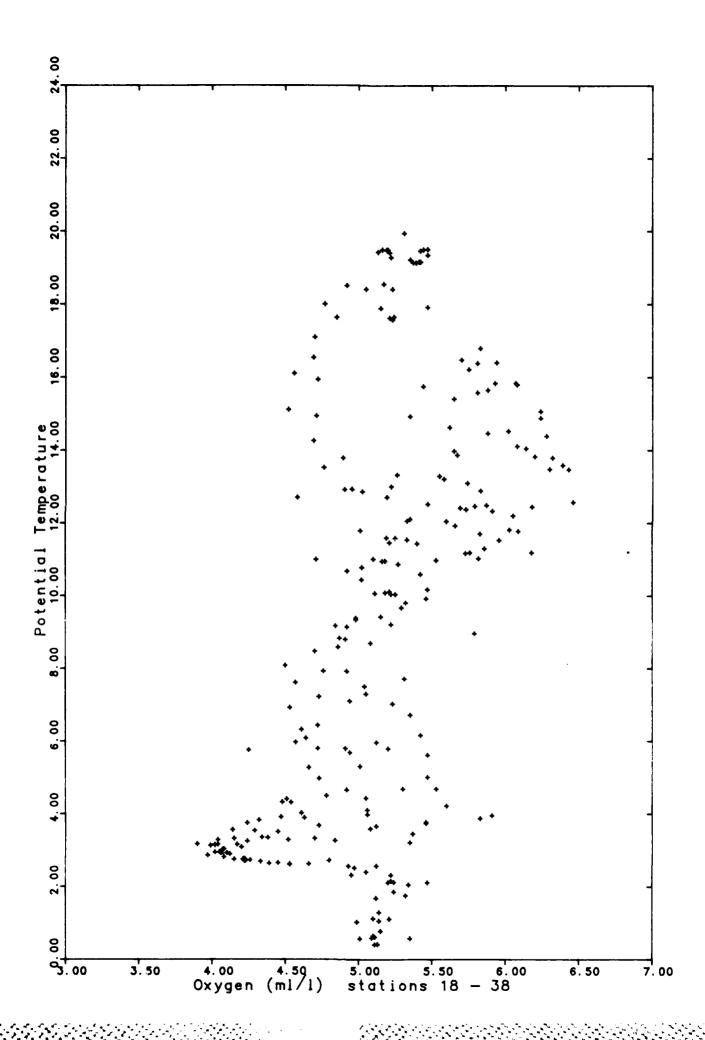


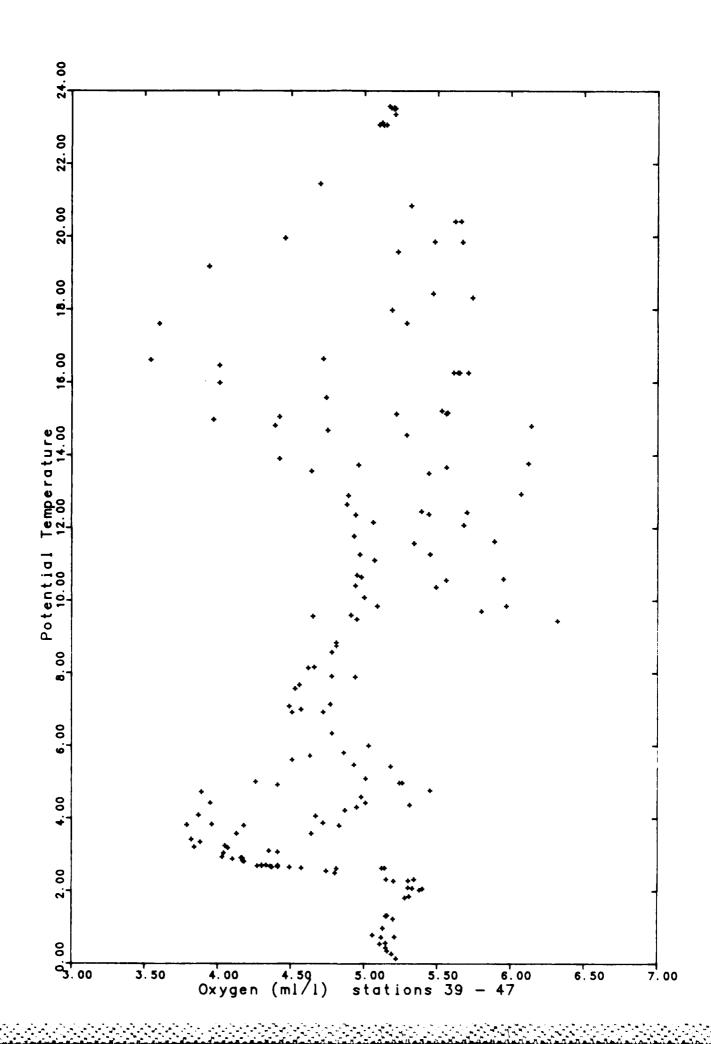


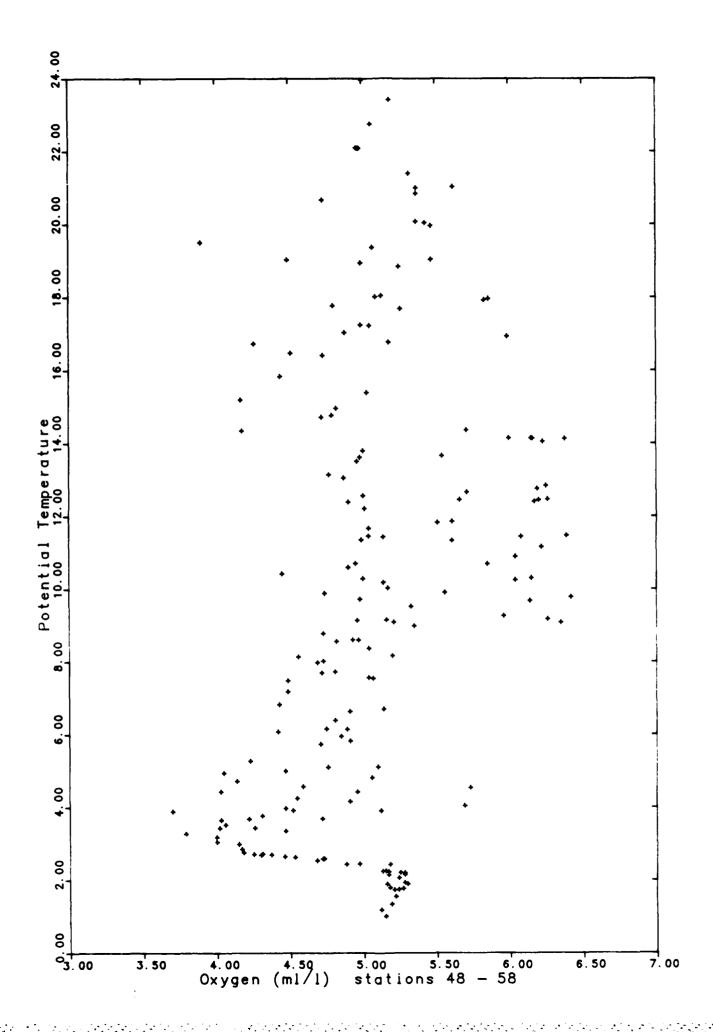


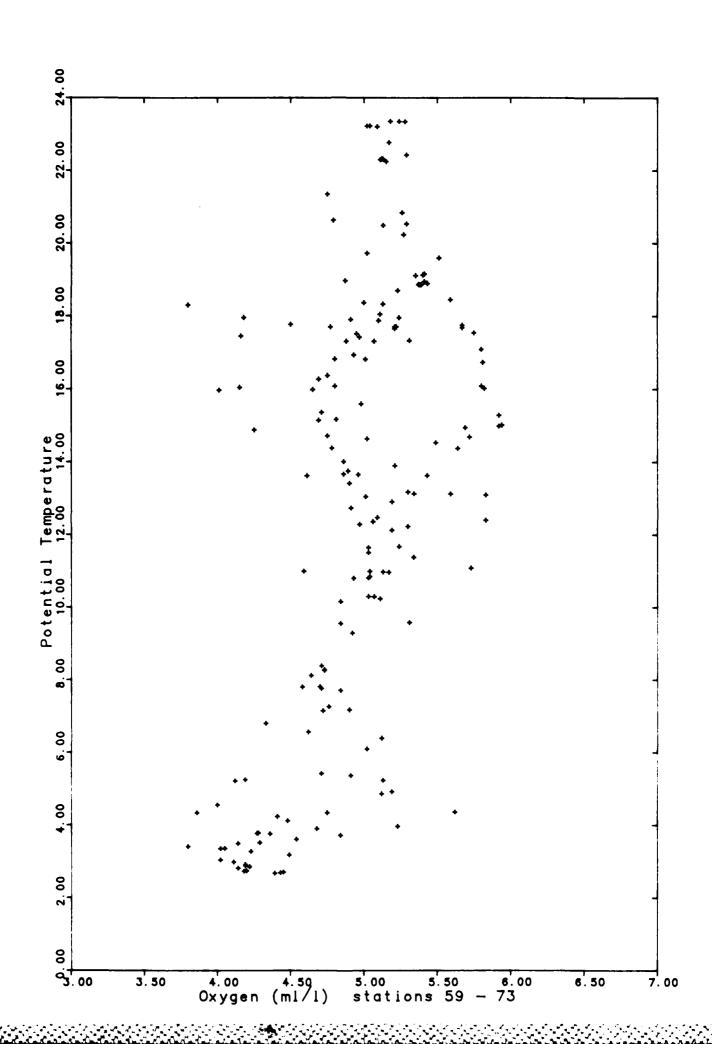


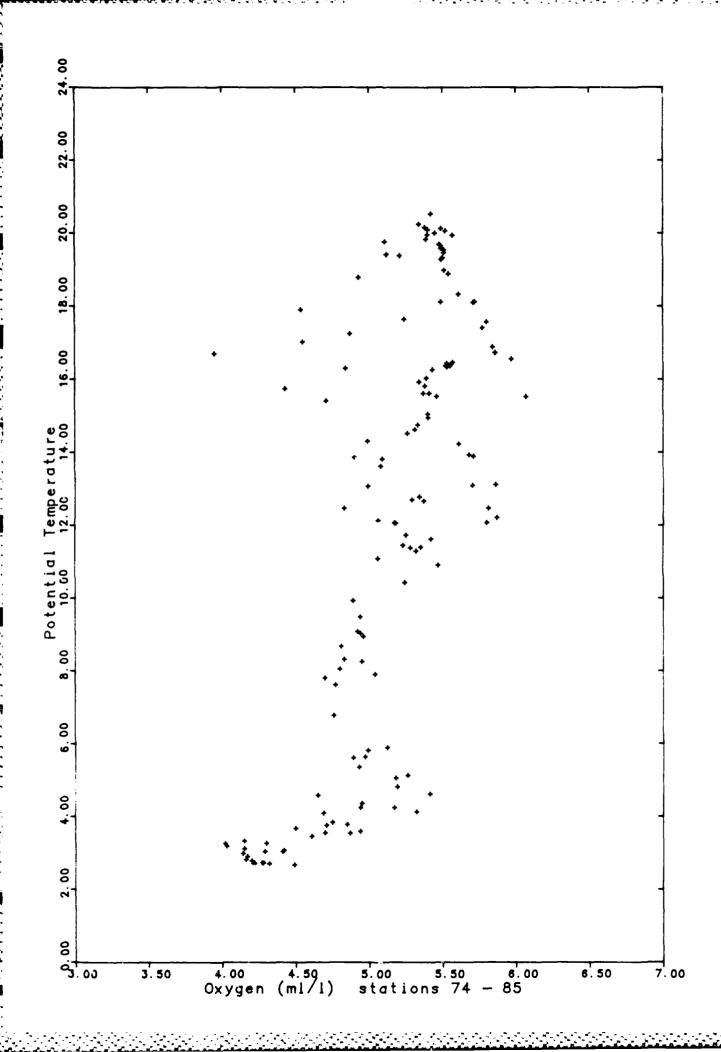


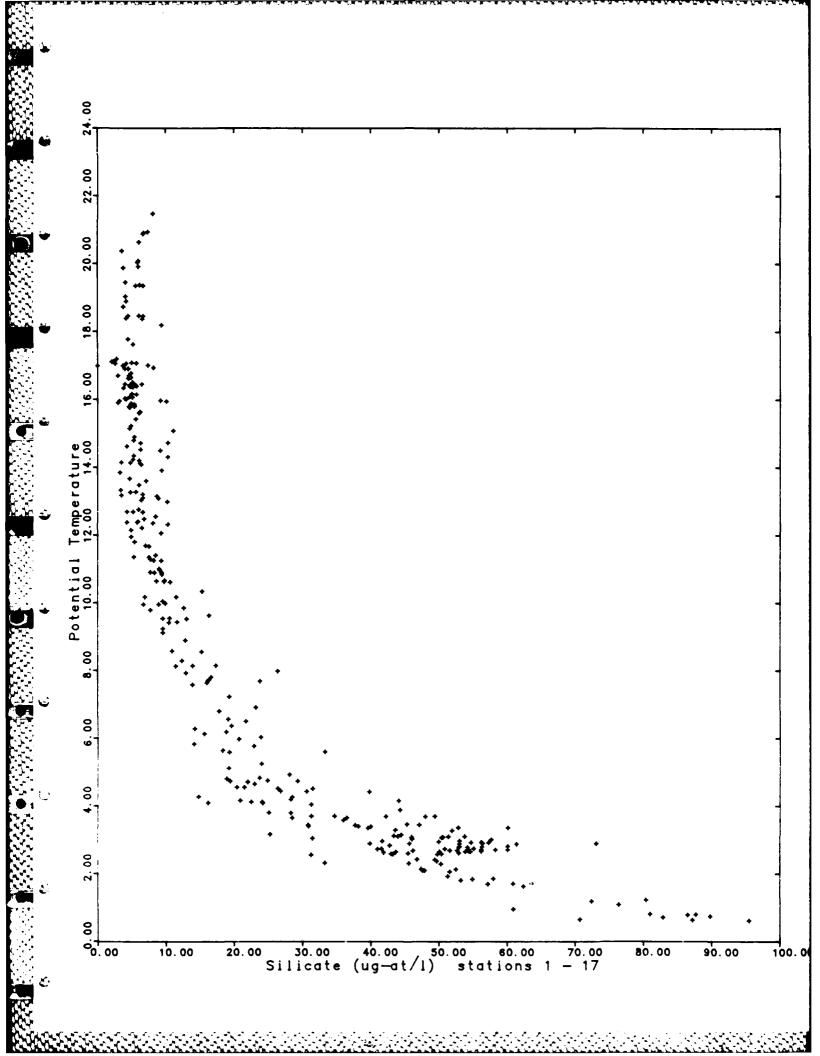


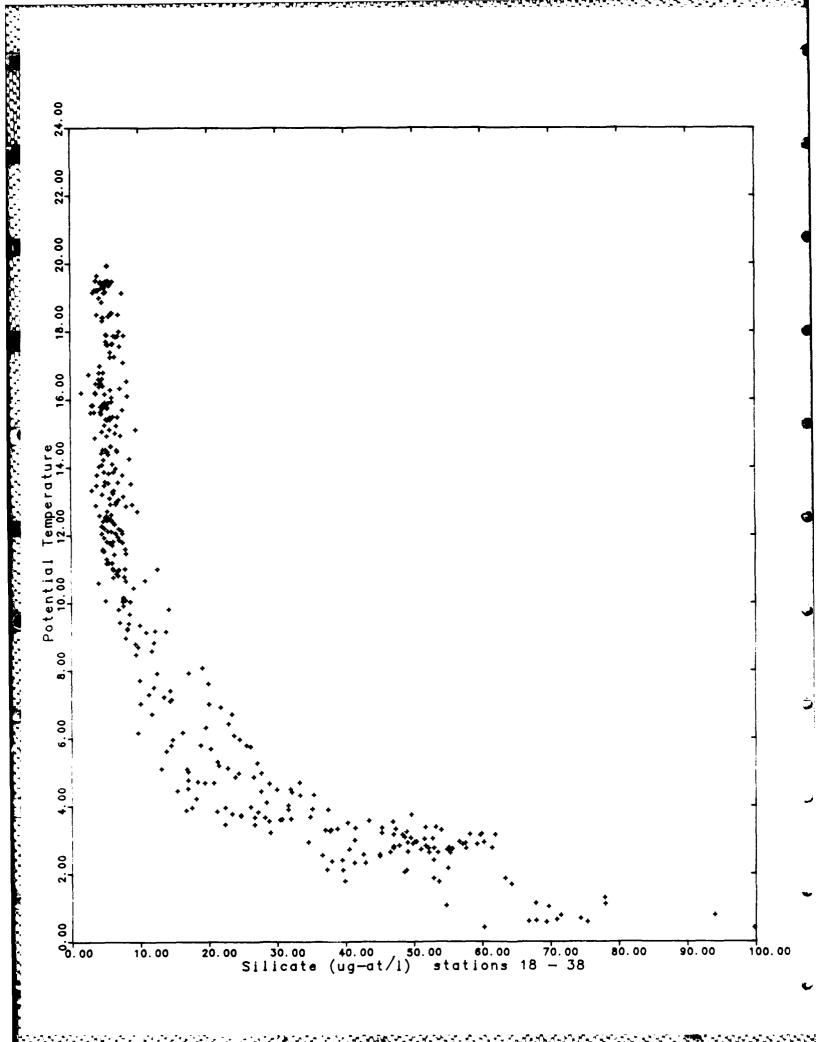


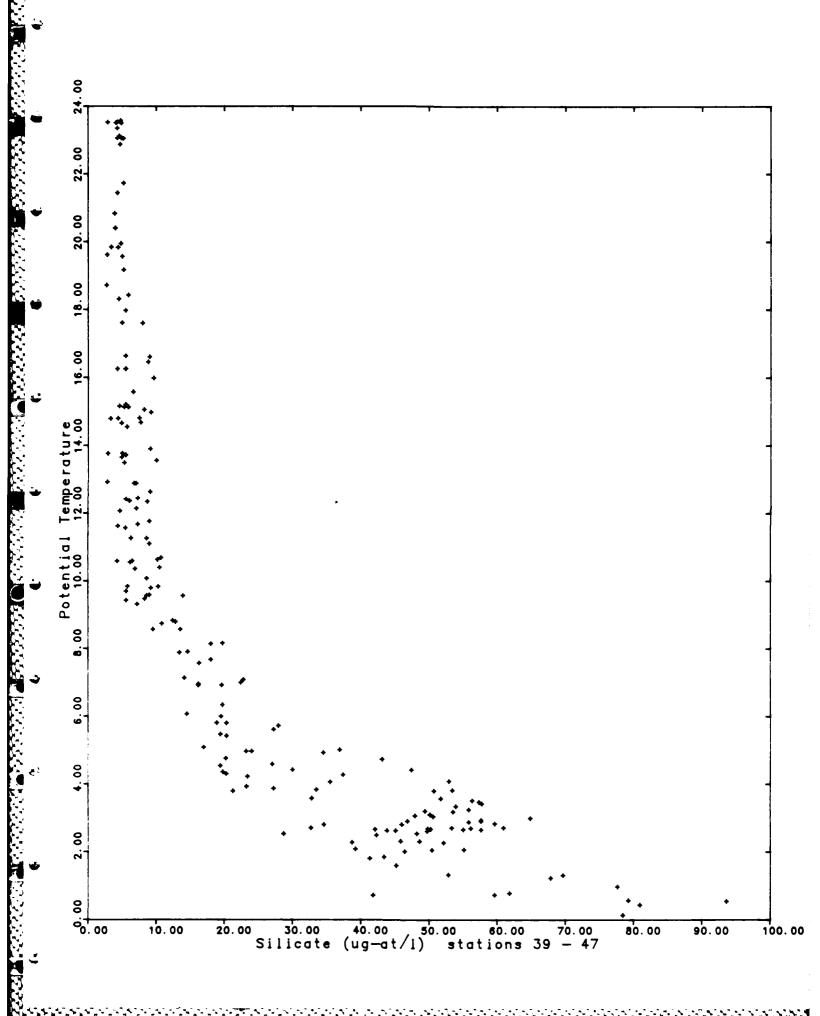


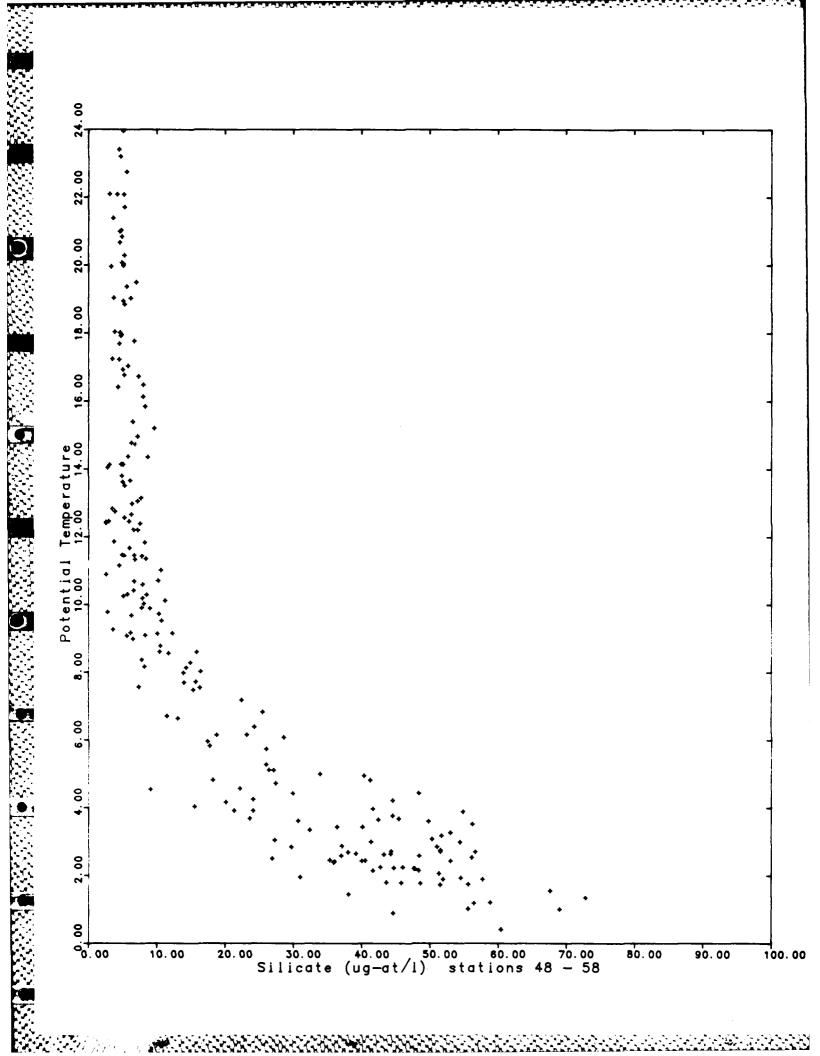


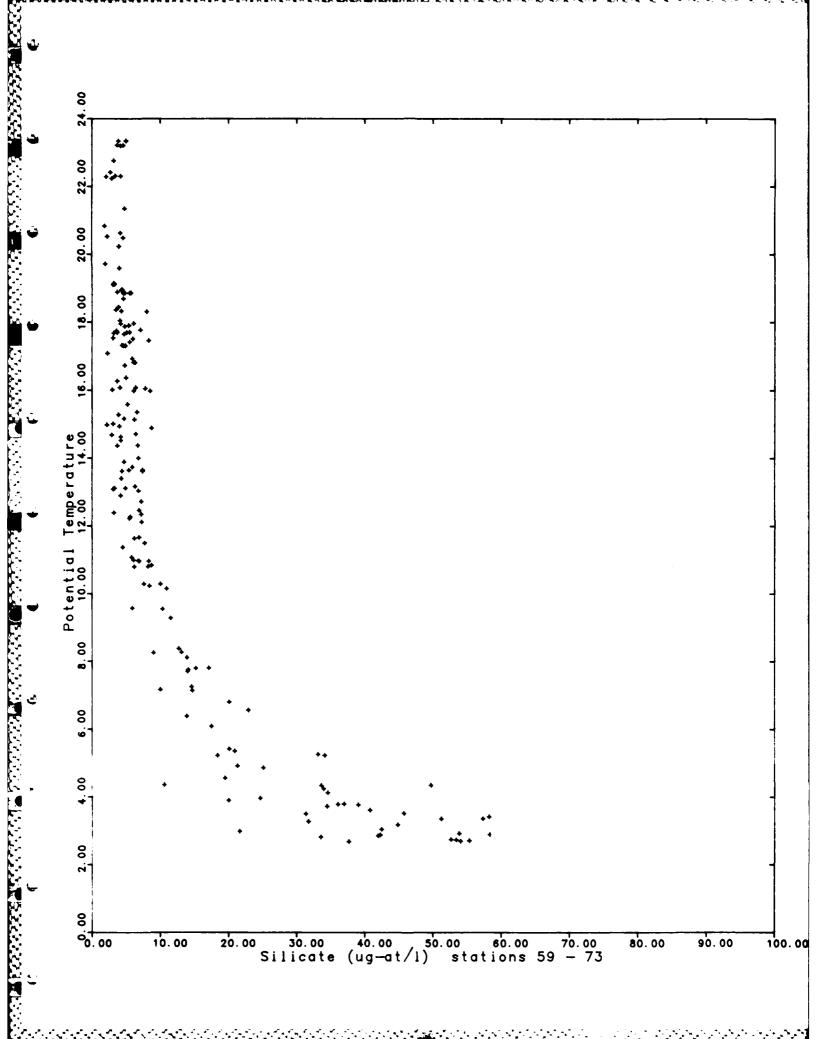


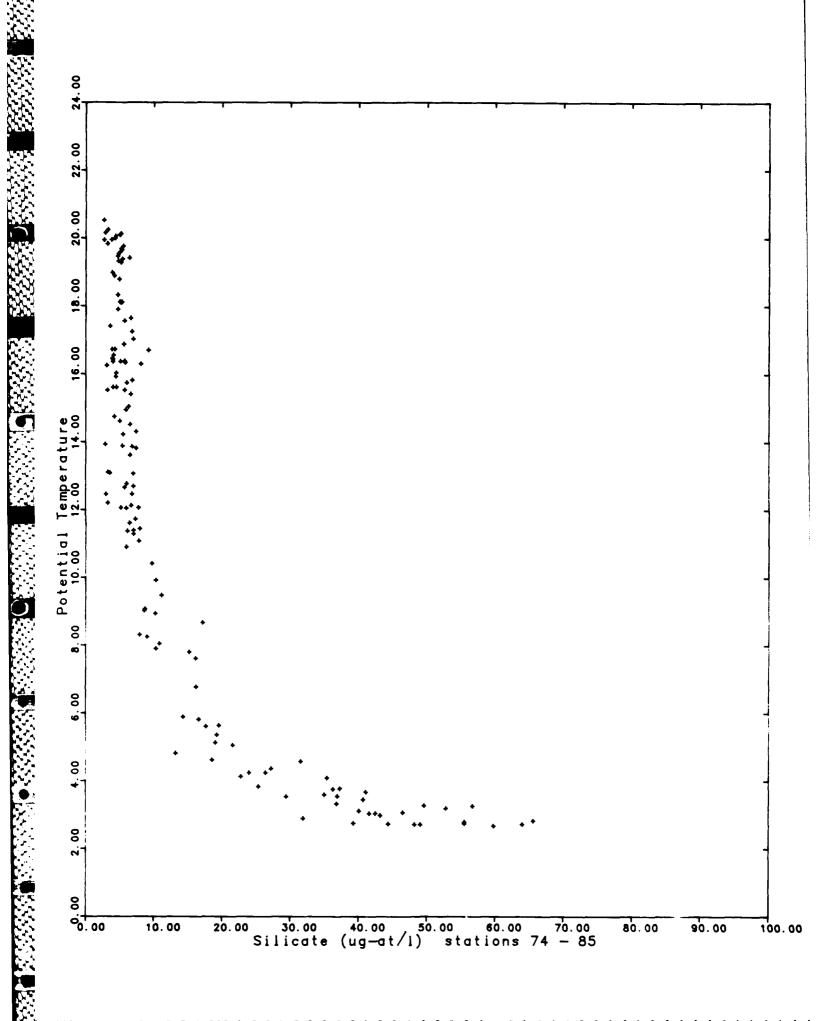


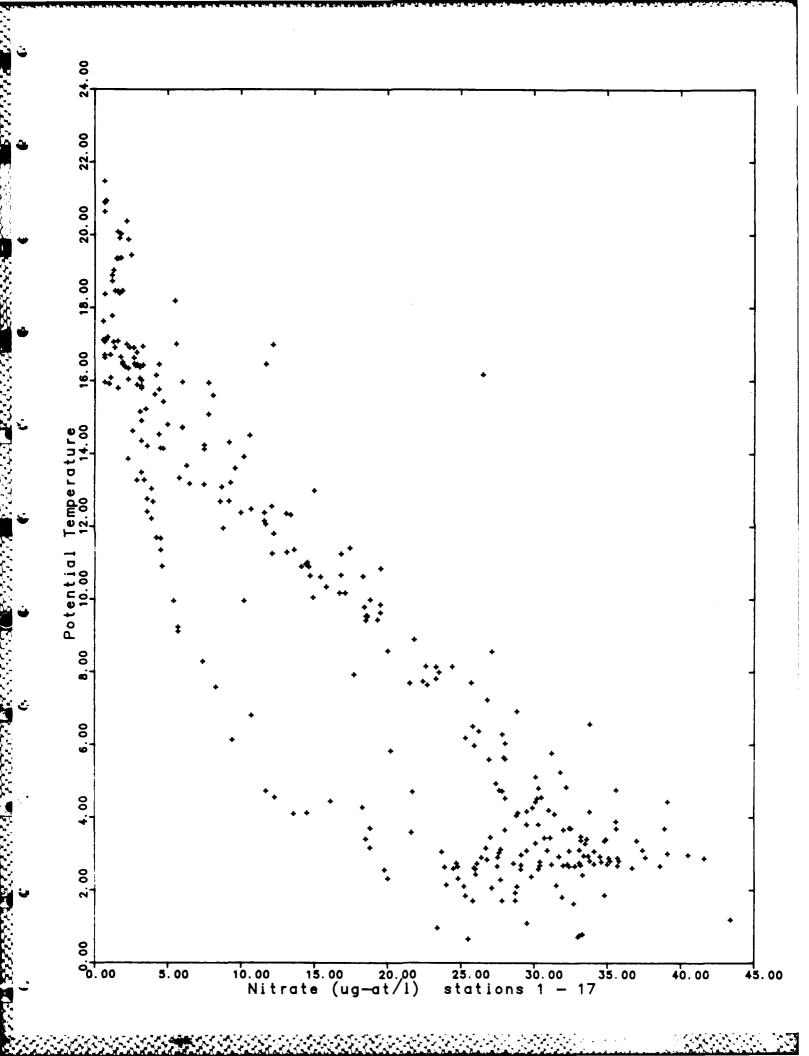


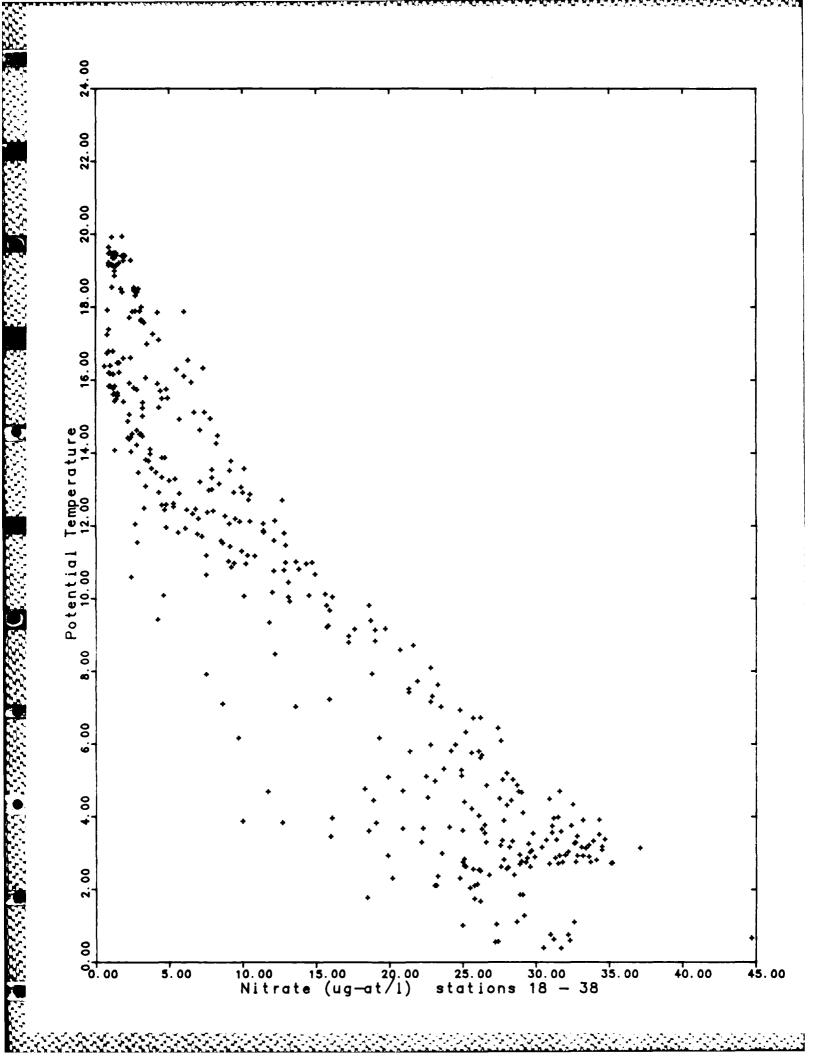


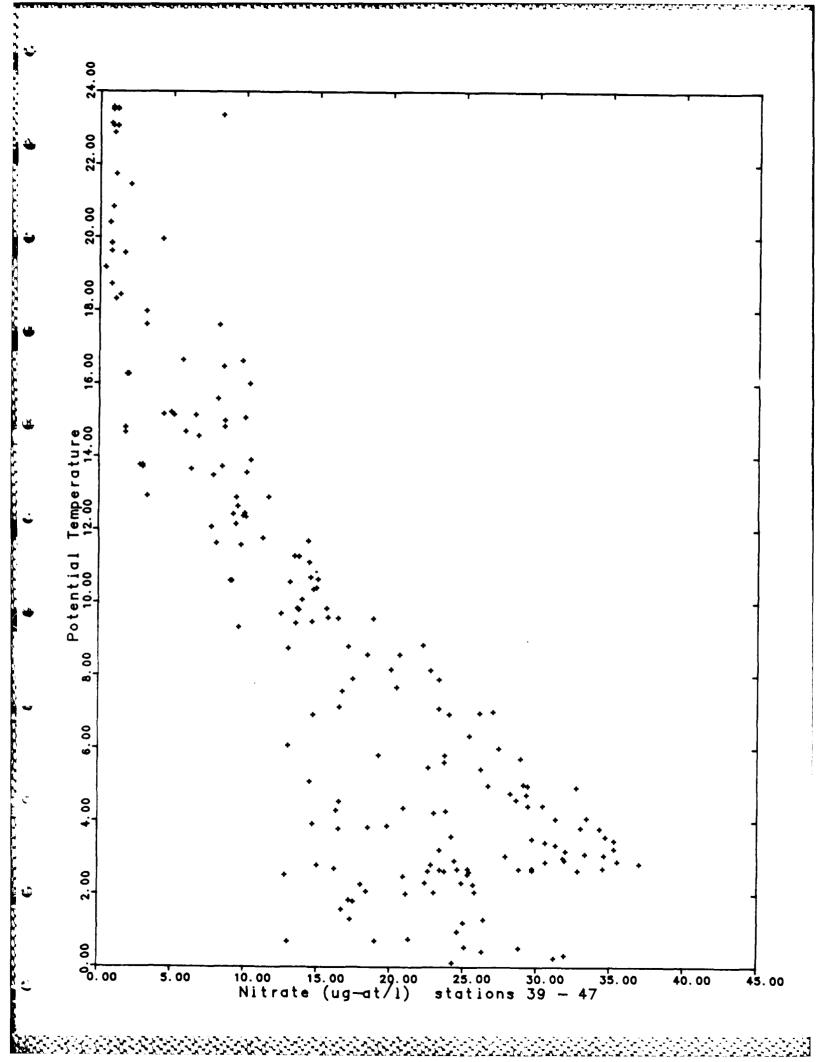


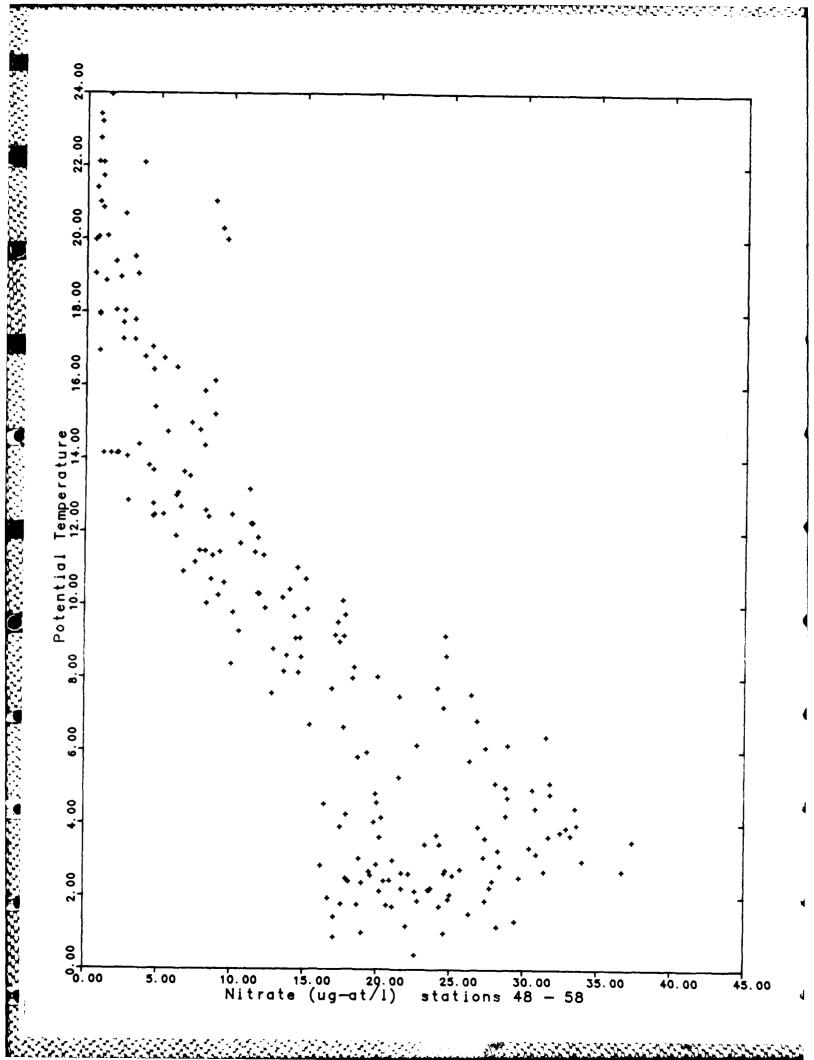


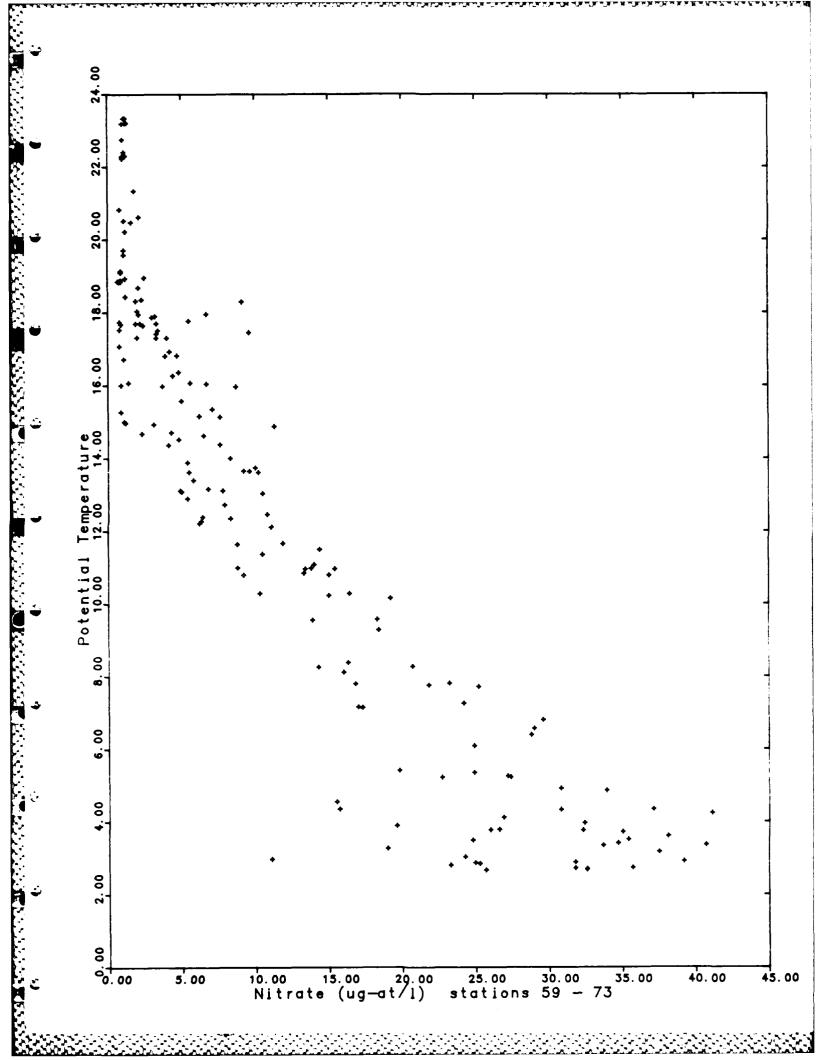


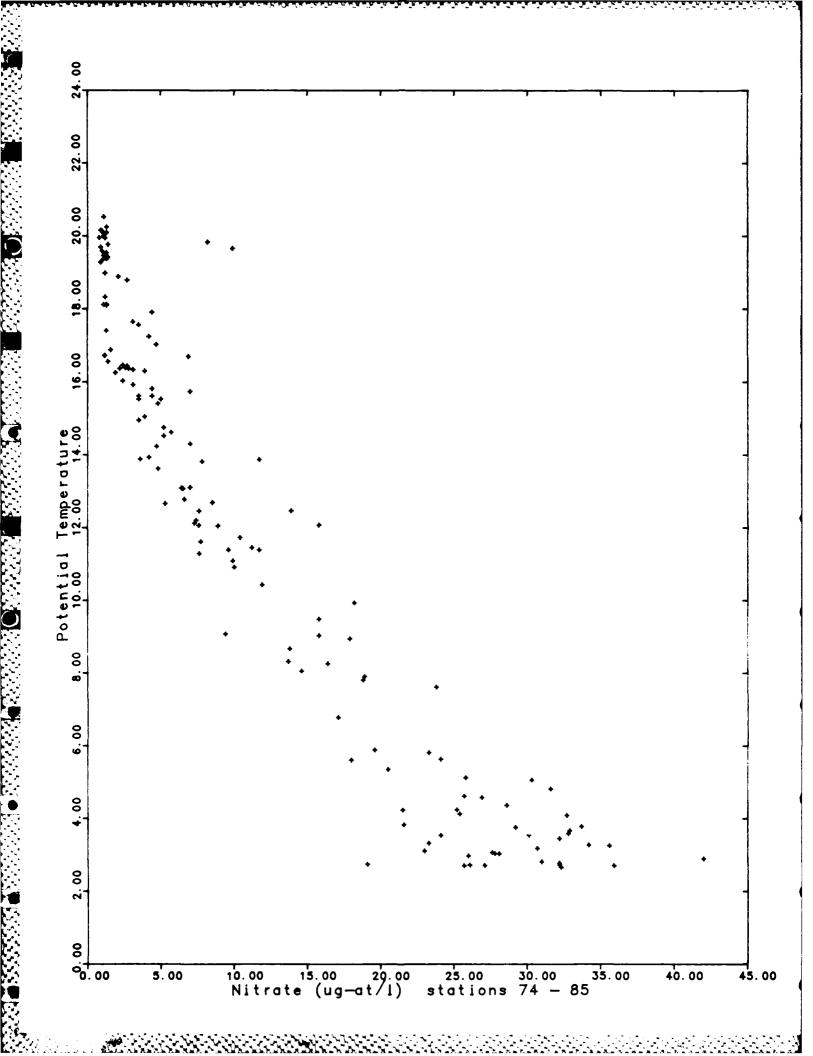


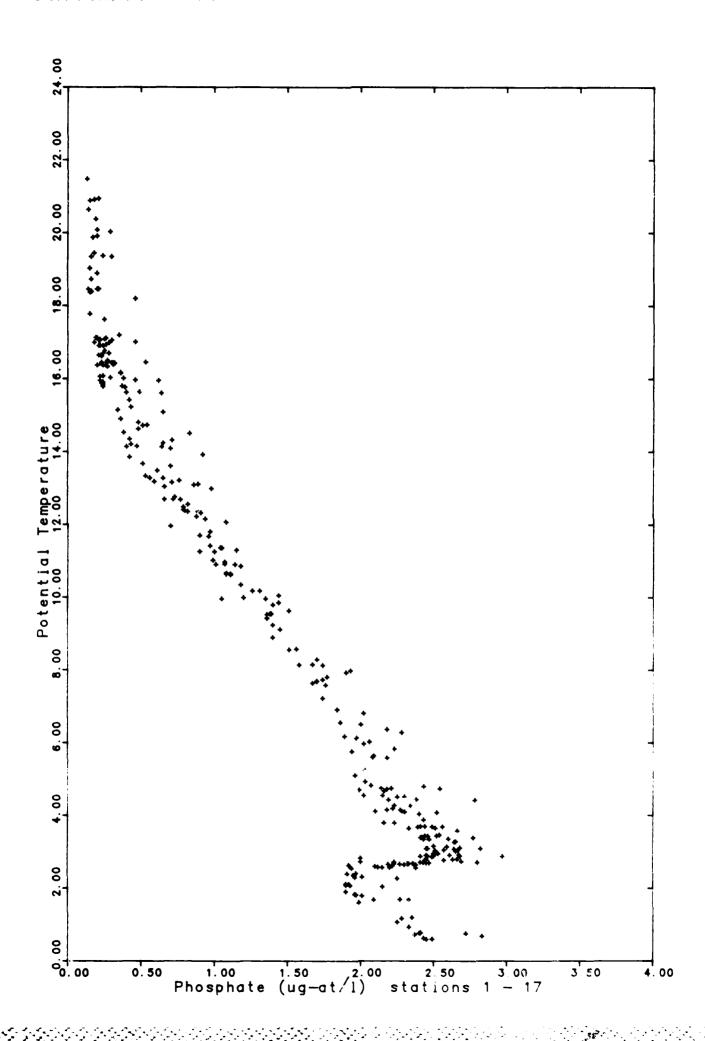


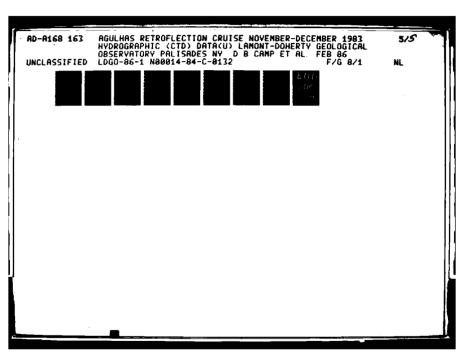


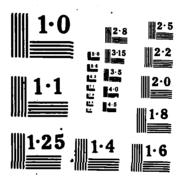




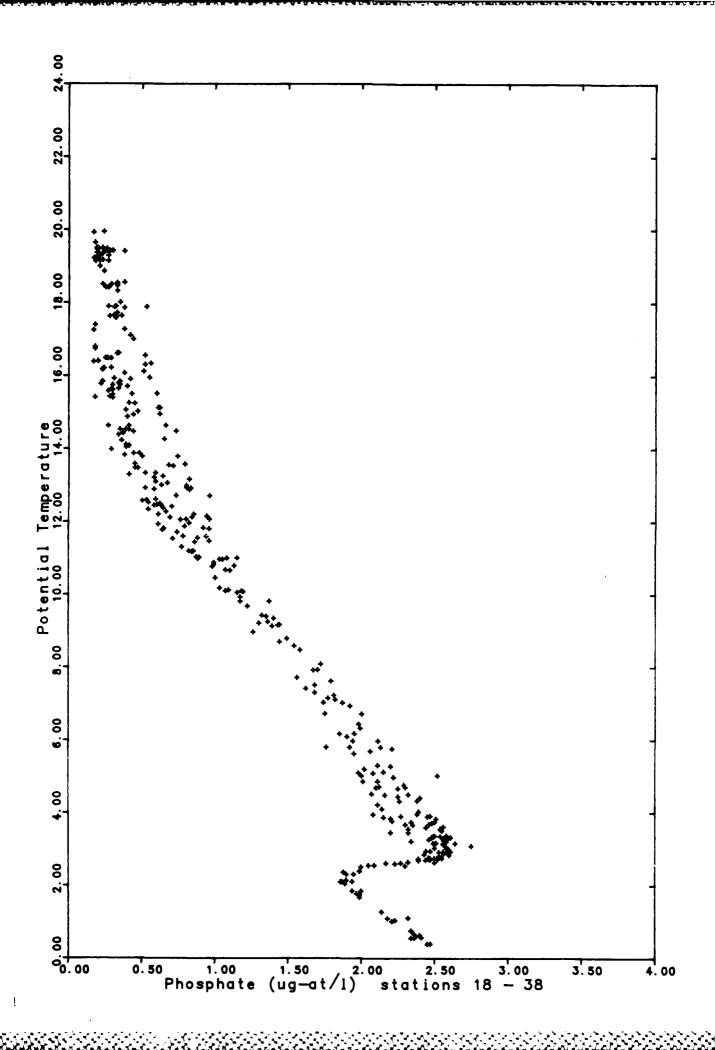




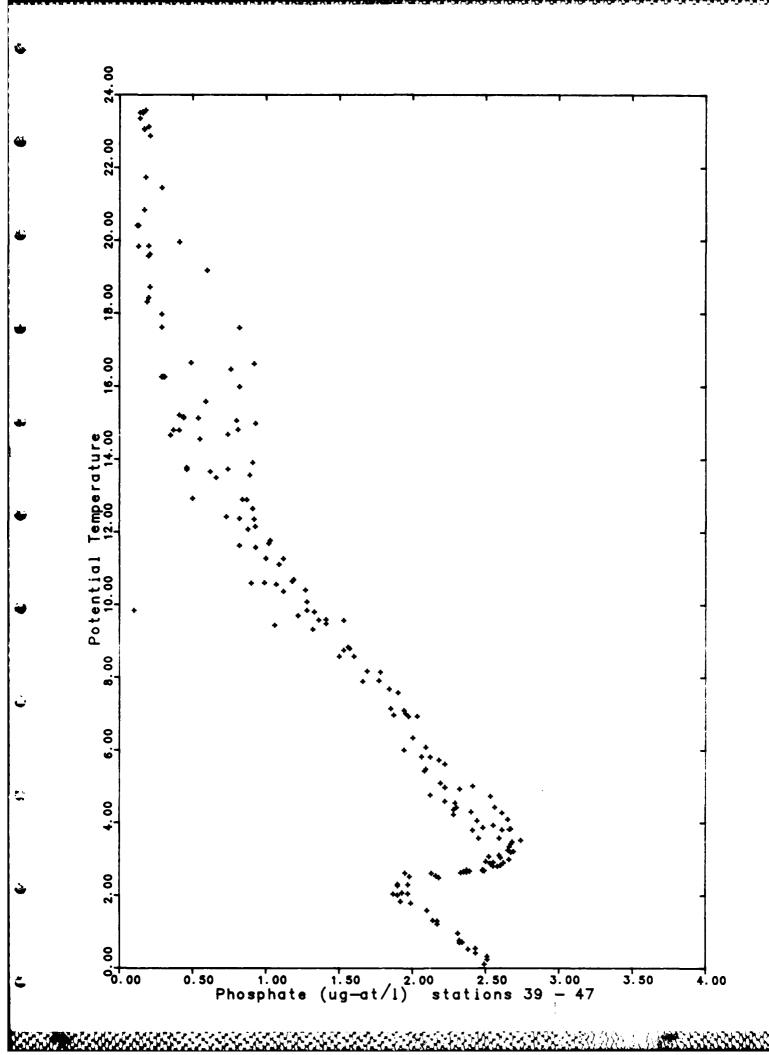


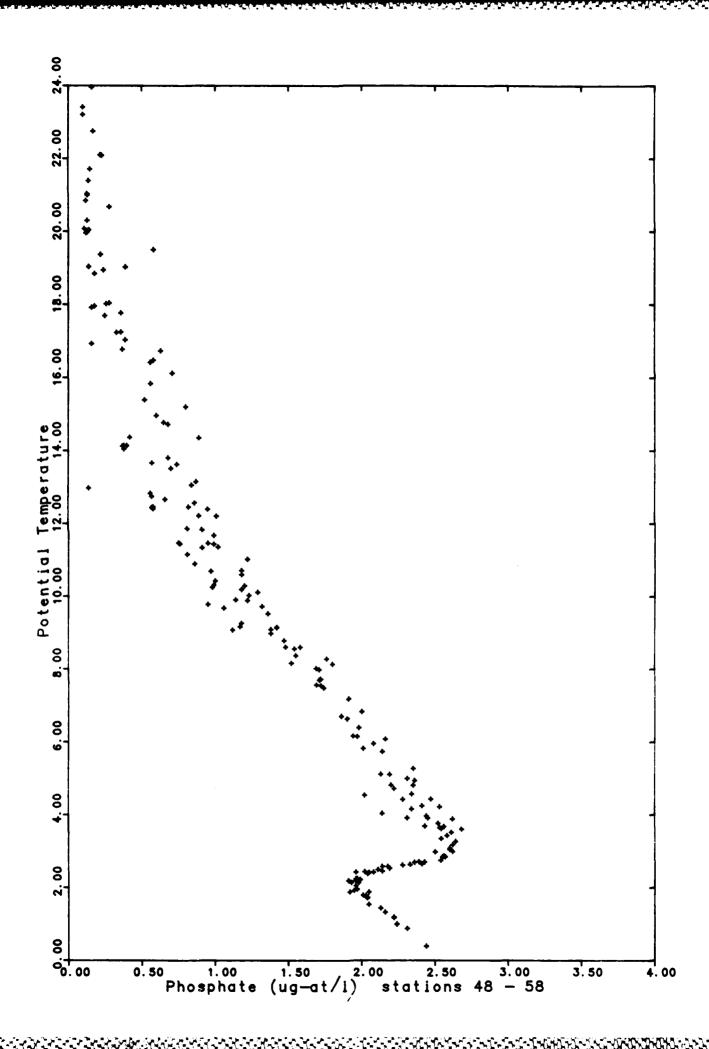


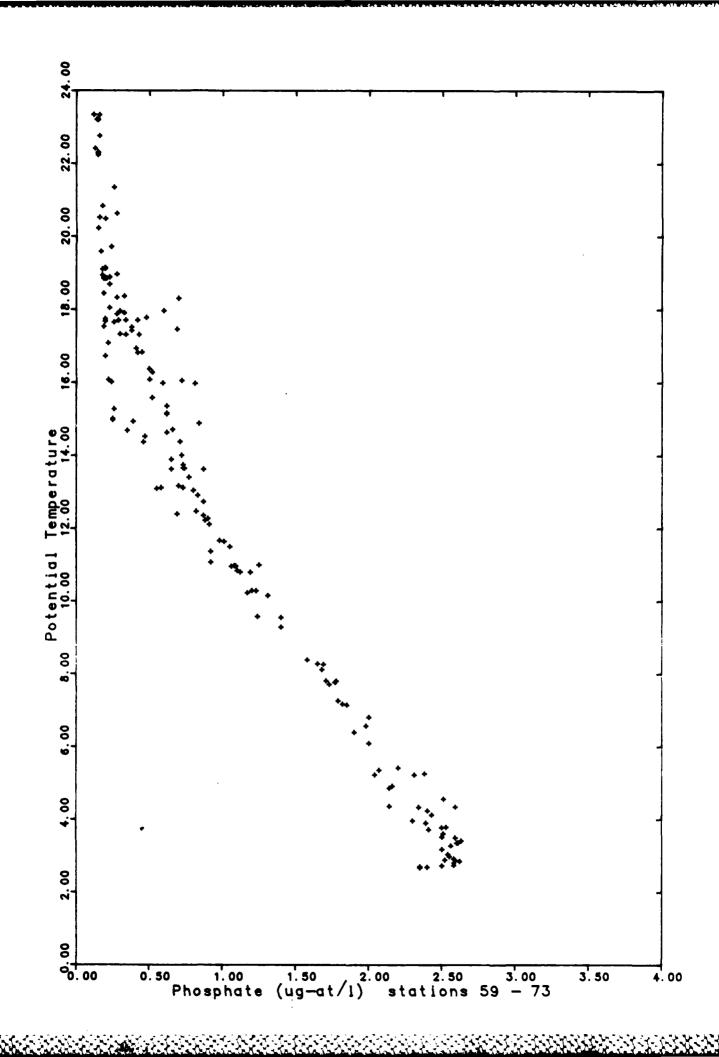
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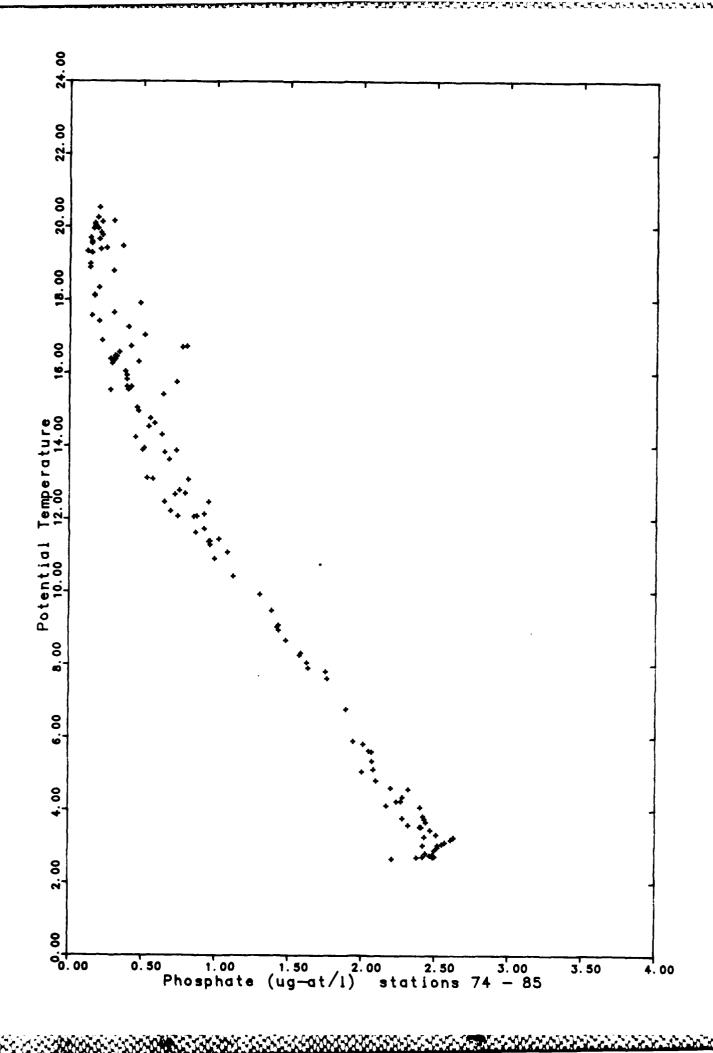


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Agulhas Retroflection Current, Southern Ocean, CTD data		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		
During November and December 1983, scientists		
aboard the R/V Knorr studied circulation and		
stratification of the Agulhas Current off South Africa. Eighty five stations were occupied. The hydrographic		
and nutrient data from those stations appear in this		
report as listings and plots. Also, processing methods		
are explained.		

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